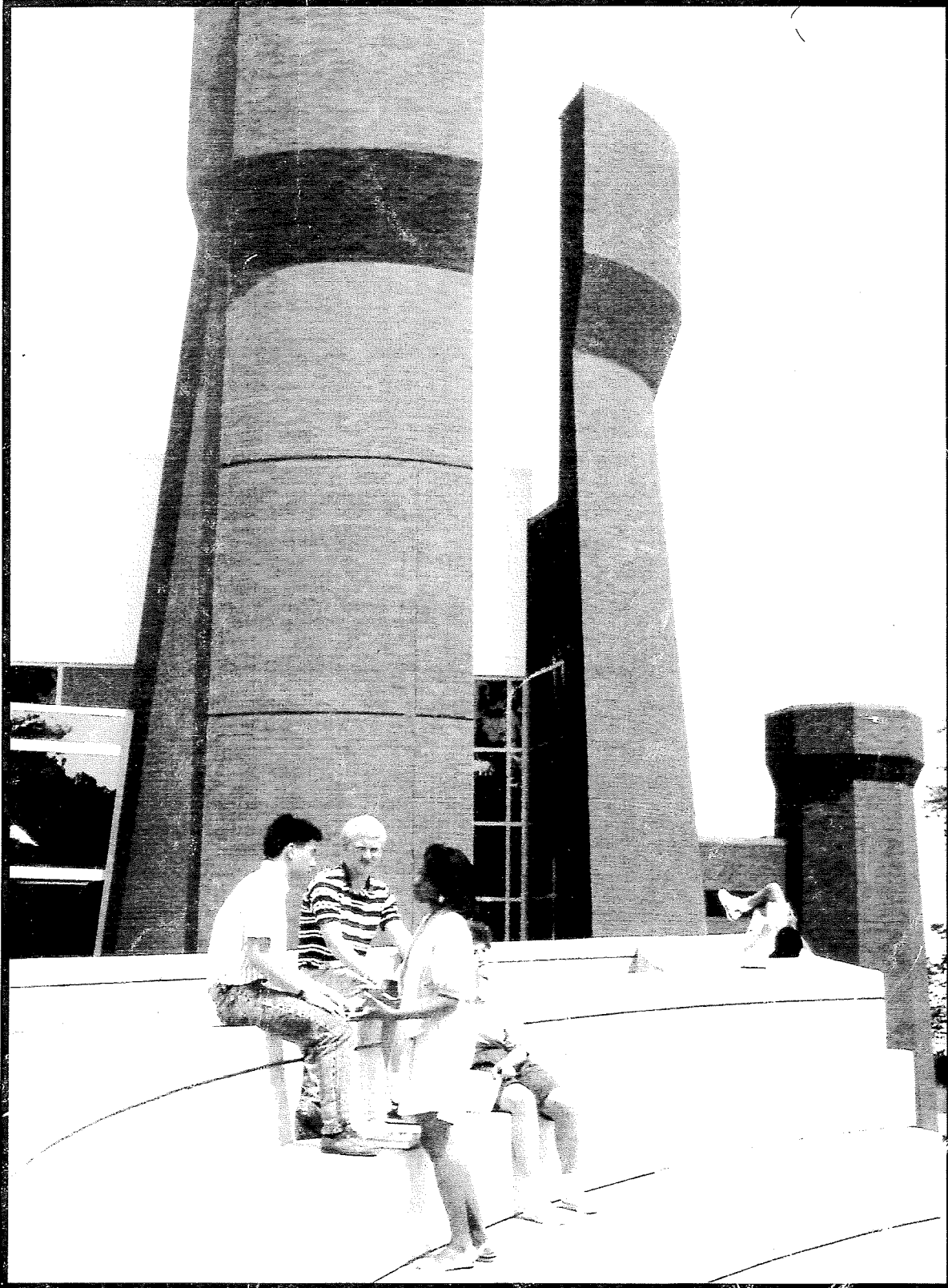


# The Ohio State University Bulletin

Course Offerings 1994-95

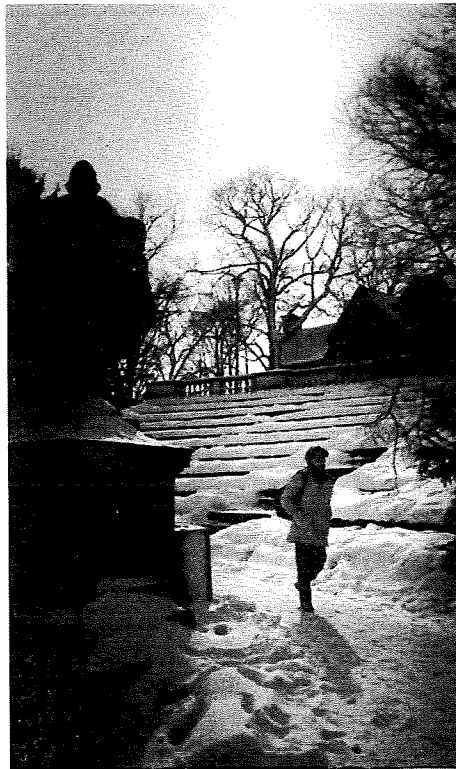


# The Ohio State University

Ohio State is the major comprehensive University in the state of Ohio. Through its central campus in Columbus, four regional campuses, Agricultural Technical Institute, educational telecommunications programs, cooperative extension service, and health care programs, the University serves the entire state. As a major land grant university Ohio State is also a national resource. Its fundamental purpose—in teaching, research, and public service—is to enhance the quality of human life through developing the individual capacity for enlightened understanding, thinking, and acting. Through the dissemination of knowledge, the University not only serves the individual but acts as a force to shape society for the common good. As such, it is also a significant international resource.

Ohio State offers degree programs in a variety of disciplines, including baccalaureate and graduate programs in the liberal arts and sciences, in agriculture, in the various professional areas, and in the health sciences. As the major graduate institution of the state, The Ohio State University plays an important role in the generation of new knowledge through research and other creative work, and in the preparation of mature scholars. The University provides the only programs in Ohio in graduate study in agriculture, in certain of the allied medical professions, in optometry, and in veterinary medicine. The quality and diversity of its instructional programs and resources afford able students the opportunity to elect programs of unusual strength in the traditional university disciplines, as well as interdisciplinary programs which reflect new ways of organizing knowledge and new approaches to contemporary problems.

Equality of opportunity is a basic philosophy of Ohio State. Mindful of the need for all persons to adapt to the changing roles and needs of society, the University also provides evening programs and continuing education opportunities to serve a wide spectrum of



lifelong learning needs. In the exploration of new ideas and in the preparation of citizens for their roles in a changing society, the University represents a human commitment—an expression of the aspiration of people to better themselves and the world in which they live.

## Campuses

Columbus  
Lima  
Mansfield  
Marion  
Newark

Agricultural Technical Institute, Wooster



# Course Offerings Book 3

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1. Application Bulletin
2. Graduate School
3. Course Offerings
4. College of Agriculture
5. Colleges of the Arts and Sciences
6. College of Business
7. College of Dentistry
8. College of Education
9. College of Engineering
10. College of Human Ecology
11. College of Law
12. College of Medicine
13. College of Nursing
14. College of Optometry
15. College of Pharmacy
16. College of Social Work
17. College of Veterinary Medicine
18. Agricultural Technical Institute
19. Office of Continuing Education
20. Preparing for Ohio State
21. General Information

## The Ohio State University Bulletin

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While every effort is made to provide accurate and up-to-date information, the University reserves the right to change without notice statements in *The Ohio State University Bulletin* series concerning rules, policies, fees, curricula, courses, or other matters. Courses may be closed because of limited resources or facilities, or canceled because of unavailability of faculty or insufficient enrollment.

The language incorporated throughout this bulletin is intended to be inclusive and free of gender specific connotation. In those instances where gender specifically remains, unless specifically noted, it is to be considered as including both the masculine and the feminine genders.

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## Student Responsibility

Students are responsible for knowing their own standing scholastically in reference to the published regulations and standards of the University and of their college or school.

## Examinations and Marks

### Course Examinations (Rule 3335-7-19)

At the close of each course as defined in rule 3335-7-01 of the Administrative Code, an examination will be given on the student's capabilities relative to the stated course objectives, the method of examining to be determined by the instructor or supervisor of the course. Examinations in laboratory and seminar courses shall be optional with the instructor concerned. Examinations for graduating students shall be given at a time near the end of each course, preferably during the last week of classes.

### Schedules for Final Examinations (Rule 3335-7-20)

Examinations for classes taught on the regional campuses and for classes whose enrollment is exclusively of students registered in the Colleges of Dentistry, Law, Medicine, Optometry, Pharmacy, and Veterinary Medicine will be scheduled by the offices of the regional campuses and of the colleges respectively. All examination schedules prepared outside the Office of the University Registrar shall, before publication, be cleared with the Office of the University Registrar which shall have the power to resolve all conflicts.

Examinations for graduating students shall be arranged by individual instructors so that final grades for the affected students may be submitted to the Office of the University Registrar by the deadlines established by that office.

All other final examinations shall be centrally scheduled by the

Office of the University Registrar. The official examination schedules shall be strictly adhered to by all instructors. Any deviation must first be approved by the appropriate university official (department chairperson, regional campus dean and director, or college dean) in consultation with the Office of the University Registrar, which shall have the power to resolve all conflicts.

In performing its scheduling function the Office of the University Registrar shall limit individual examinations to two-hour duration and the total examination period to no more than five days.

### Marks (Rule 3335-7-21)

The official marks of the University are A, A-, B+, B, B-, C+, C, C-, D+, D, E, EM, I, K, P, PA, NP, R, S, U, and W. The marks shall have the following meanings:

**A, A-** The instructor judged the student to have satisfied the stated objectives of the course in an excellent manner. The student's performance was judged to be *in this range* of high quality based upon a comparison with other students in the course, and/or with students who have taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

**B+, B, B-** The instructor judged the student to have satisfied the stated objectives of the course in an above-average manner. The student's performance was judged to be *in this range* of above-average quality based upon a comparison with other students in the course, and/or with students who have taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

**C+, C, C-** The instructor judged the student to have satisfied the stated objectives of the course in an average manner. The student's performance was judged to be *in this range* of average quality based upon a comparison with other students in the course, and/or students who have

taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

**D+, D** The instructor judged the student to have satisfied the stated objectives of the course in a *low but acceptable* manner. The student's performance was judged to be *in this range* of below average but acceptable quality based upon a comparison with other students in the course, and/or with students who have taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

**E** The instructor judged the student not to have satisfied the stated objectives of the course. Credit for a course in which the mark E has been received can be obtained only by repeating and passing the course in class. (See rules 3335-7-23 to 3335-7-28 of the Administrative Code.)

#### **EM Examination**

This mark indicates credit given to students registered in the University on the basis of examinations taken prior to or after admission to the University. The level of achievement which must be demonstrated by the student on these examinations in order to receive EM credit shall be determined by the department or school in which the course is offered for credit, in accord with the criteria for the award of letter grades. This credit, up to a maximum of 45 credit hours, shall be assigned only upon the authorization of the chairperson of the department or the director of the school and with the approval of the authorized representative of the dean or director of the student's enrollment unit. Additional examination credit hours may be assigned specific curricular programs with the prior approval of the Council on Academic Affairs.

Examination credit shall not be given to a student for a course in which the student has received a mark at this University or for which the student has transfer credit from some other college or university. Conversely, no course for which EM credit has been received can be taken later for a grade or credit. No credit points are allowed for courses in which a mark of EM is given.

#### **I Incomplete**

An I indicates that the student has completed a major portion of the work in the course in a satisfactory manner, but for reasons judged by the instructor to be legitimate, a portion of the course requirements remains to be completed.

The mark I shall be reported to the Office of the University Registrar together with the mark which the University Registrar is authorized to enter on the student's official record unless a different mark is reported to the Office of the University Registrar in the manner and within the time described below.

The student must complete the work so that the instructor of the course may report the final mark at the earliest possible time, but not later than noon of the sixth Saturday of the quarter, semester, or session following that in which the I was received. For legitimate reason, the instructor may establish a deadline for the completion of the work which is within the maximum time permitted. Upon petition of the student within this period, the authorized representative of the dean or director of the enrollment unit in which the student was last enrolled after consultation with the instructor of the course, or, if the instructor is unavailable, the chairperson of the department involved, may for good reason allow a student additional time in which to complete the work. Generally, this shall not be longer than the end of the quarter, semester, or session following that in which the I was received. Any decision extending the period shall set forth the time in which the student shall complete the work and a copy of the decision shall be forwarded to the Office of the University Registrar.

As soon as the incomplete work has been made up, the instructor, or in the case of the instructor's absence from the University, the department chairperson or the director of the school, shall file the proper mark in the Office of the University Registrar. Until such time as a final mark is recorded the credit

for the mark I shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code.

In no case shall a student who has received the mark I be permitted to repeat the course in which such mark was received until such time as the I has been removed and then only in such cases as fall within Rule 3335-7-28 of the Administrative Code.

#### **K Credit**

This mark shall be used for work credited from other institutions by the director of admissions only. K credit shall be counted as hours only and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code (page 6).

#### **P Progress**

This mark is used to indicate that the student has shown satisfactory progress in a series or sequence of courses where the mark is not recorded until the final quarter, semester, or session of the series or sequence is completed. Until such time as a final mark is recorded the mark of P shall be given and the credit shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code (page 7). When a final mark is submitted by the instructor, all previous P marks shall assume and be recorded with the value of the final mark.

P mark is not to be used for any course approved for the S, U grading option.

#### **PA-pass, NP-non-pass**

The grade pass PA means the student has satisfied the stated objectives of the course, and the grade non-pass NP is the equivalent of the grade E.

These marks may be used at the option of undergraduate or continuing education students only, subject to the following conditions:

This grading pattern may be chosen for a maximum of thirty credit hours, provided the student has an accumulated point-hour ratio of 2.00 or higher.

Among these thirty credit hours, an undergraduate student may elect this option for courses in fulfillment of the curricular requirements of Rule 3335-7-06 of the Administrative Code.

An undergraduate student may elect this option for courses that are not required or designated as required electives in the curriculum leading to the degree for which the student is a candidate.

Hours graded pass PA count toward the minimal number of hours required for a degree. Pass or non-pass marks (PA, NP) are not computed in the point-hour average of the student.

Before five p.m., of the third Friday of a quarter or the second Friday of a term, a student must have declared intention to take a course on this basis by filing the appropriate form with the dean or director of the student's enrollment unit. A student may not change to or from this option after five p.m. of the third Friday of a quarter or the second Friday of a term.

#### **R Registered to Audit**

This mark indicates that the student has registered to audit the course and has met the conditions established for audit enrollment in the course. No credit hours shall be awarded for this mark (See rules 3335-7-29 and 3335-7-33 of the Administrative Code).

Before five p.m. of the third Friday of a quarter, semester, or session, or the second Friday of a term, a student must have declared intention to take a course for audit or to change from a credit to an audit basis by filing the appropriate form with the dean or director of the student's enrollment unit. A student may not change to or from the audit option after five p.m. of the third Friday of a quarter, semester, or session, or the second Friday of a term.

**S-Satisfactory, U-Unsatisfactory**

The mark S may be used to record either satisfactory progress in or completion of work, provided that the course has been approved for this mark by the dean of the college offering the course, and in the case of courses carrying graduate credit, by the dean of the Graduate School. It shall be used as an alternative to U or I in all individual studies courses whatever their number. S credit shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code.

The mark U shall be used for unsatisfactory work in courses in which a student would be entitled to the mark of S if the student's work had been satisfactory. No credit shall be given for work marked U. This mark shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code.

**W Withdrew**

This mark is used for students withdrawing from one or more courses or from the University. See Rule 3335-7-32 of the Administrative Code for procedures and provisions governing withdrawals.

**Report of Marks (Rule 3335-7-22)**

Upon completion of the course requirements, marks for every student shall be reported to the Office of the University Registrar in accord with deadlines listed in the quarterly *Master Schedule of Classes*.

*This office maintains the student's official permanent record and is responsible for issuing a quarterly grade report to each student*

**Alteration of Marks (Rule 3335-7-23)**

(A) A mark filed in the Office of the University Registrar is a part of the official records of the University. It is subject to change only when a procedural error has been discovered in evaluation or recording of a grade. Action to change a grade must be initiated before the end of the second succeeding quarter. In no case will a grade be revised in accordance with criteria other than those applied to all students in the class. If the instructor agrees that an error in the mark was made, the mark will be changed upon written authorization of: the instructor of the course; the instructor's department chairperson; the director of the instructor's school, if applicable; the dean of the instructor's college; and the authorized representative of the dean or director of the student's enrollment unit.

If a student believes that a procedural error in grading was made, the student should meet with the instructor. If the instructor does not agree that a procedural error was made, the student may meet with the department chairperson to discuss the grade grievance. The chairperson shall respond to the student no later than 30 days after the student has requested a review by the chairperson. Upon receipt of the chairperson's response, if the issue is not resolved to the satisfaction of the student, the student may within two weeks request in writing by duplicate submission to the dean or director of the instruction unit and the department chairperson the procedures in paragraph (B) of this rule. Unresolved cases of grade grievance due to grading procedures are subject to paragraph (B) of this rule; unresolved cases of grade grievance due to other causes are not subject to paragraph (B) of this rule.

(B) Unresolved cases of grade grievances due to grading procedures shall be reviewed by a faculty departmental committee appointed by the department chairperson.

- In cases of instructors still affiliated with the University, the review committee shall consult both the student and the instructor and shall determine the validity of the grade grievance due to grading procedures. The review committee shall make its findings known in writing to both the student and the instructor within 30 days of the student's request to the chairperson. If the committee finds that a procedural error has

occurred and if the instructor declines to accept the findings of the review committee, the committee shall consider the reasons for not authorizing a grade change given by the instructor and may, upon consideration of these reasons, authorize in writing a grade change to be instituted by the department chairperson.

- In cases of instructors no longer affiliated with the University, the findings of the committee shall be reported to both the student and the instructor. If the instructor chooses not to respond, the judgment of the committee shall prevail. If the instructor responds and declines to accept the findings of the committee that a procedural error has occurred, the committee shall consider the reasons for not authorizing a change given by the instructor. In either case, the committee may, upon due consideration, authorize in writing a grade change (if such can be determined) to be instituted by the department chairperson.

If a department committee can find no academic basis upon which to recommend an appropriate grade for the course, the student shall be given the option of having the course stricken from the student's record and, if so desired, to retake that course without prejudice or penalty.

(C) If charges of grave academic misconduct against an instructor are made and substantiated under Rule 3335-5-04 of the Administrative Code, the department chairperson shall be authorized to appoint a department grade grievance committee to consider grading errors that are alleged to be related to the misconduct. The committee shall consider all evidence and present, in writing, a report to the chairperson indicating any recommended grade changes. The department chairperson shall be authorized to institute grade changes in accordance with the recommendations of the committee.

If a department committee can find no academic basis upon which to recommend an appropriate grade for the course, the student shall be given the option of having the course stricken from the student's record and, if so desired, to retake that course without prejudice or penalty.

The Graduate School and graduate professional colleges may formulate appropriate modifications of this rule, subject to the approval of the Council on Academic Affairs, and publish this rule in their bulletins.

## Course Credit

**Credit Hours (Rule 3335-7-24)**

(A) All courses shall be assigned a number of credit hours in accordance with the procedure outlined in rules 3335-7-02 to 3335-7-04 of the Administrative Code. This may be any number from zero on up; however, in determining the credit hours assigned, the department, school, college, and Council on Academic Affairs should use as a guide the following suggested standards:

- 1) One credit hour shall be assigned for each three hours per week of the average student's time, including class hours, required to earn the average grade of C in this course.
- 2) One credit hour shall be assigned for each two consecutive hours of practical or experimental work per week in any department or school.
- 3) One credit hour shall be assigned for each three hours of laboratory work per week, when no additional outside work is required. When outside work is required, then the standard in paragraph (A) (1) of this rule shall be applied.

(B) In determining the hours per week required by the course or work, the Council on Academic Affairs may, in appropriate cases, consider the average weekly hours spent during a quarter, semester, or session on the course or work. It should be remembered that the above are guides only and may be deviated from for good cause.

(C) When comparing or combining semester credit hours with quarter credit hours, one semester credit hour shall be the equivalent of one and one-half quarter credit hour.

### Credit Points and Point-hour Ratio (Synopsis of Rules 3335-7-25 and 3335-7-26)

A student's academic standing for a quarter, semester, or session is expressed by the point-hour ratio. This ratio is found by dividing the total number of points earned by the total number of credit hours scheduled or undertaken. Courses in which the marks EM, I, K, NP, P, PA, R, S, U, or W are given are not included in the computations. Courses in which the marks A, A-, B+, B, B-, C+, C, C-, D+, D, or E are given are computed according to the scale: A=4.00, A-=3.70, B+=3.30, B=3.00, B-=2.70, C+=2.30, C=2.00, C-=1.70, D+=1.30, D=1.00, and E=0.00. The following example shows how a point-hour ratio is determined.

	Hours	Grade	Points
Course No. 1	5	A	20.0
Course No. 2	3	C+	6.9
Course No. 3	(3)	I	
Course No. 4	3	E	0.0
	—	—	—
	11		26.9

Point-hour ratio: 2.44

When the final grade on Course No. 3 is recorded, the points and hours will be included in the computation of the student's point-hour ratio. When a student has a record for two or more quarters, semesters, or sessions, the student will have a cumulative point-hour ratio determined by dividing the total points earned by the total hours undertaken.

The point-hour ratio begins anew when a student enrolls in Dentistry, Law, Medicine, Optometry, Pharmacy, Veterinary Medicine, or the Agricultural Technical Institute.

When determining the point-hour ratio of a student:

- For a quarter, semester, or session if applicable, the applicable number of credit hours shall be the student's scheduled credit hours in that quarter, semester, or session.
- For the student's work in the University, the applicable number of credit hours shall be the total number of credit hours undertaken in the University except as modified by Rule 3335-7-271.
- For the student's work in the Graduate School, the applicable number of credit hours shall be the total number of graduate credit hours undertaken while enrolled in the Graduate School. For the student's work in a professional college or school or professional division of a college, the applicable number of credit hours shall be the total number of credit hours undertaken while enrolled in the professional college or school or professional division of a college.
- For the student's work in the major field of interest, the applicable number of credit hours shall be the total number of credit hours undertaken in courses approved for the major program.

No College of Medicine point-hour average shall be computed for a student enrolled in the College of Medicine in a curriculum leading to the degree, Doctor of Medicine, when that student has received only the marks of H, S, or E in the College of Medicine.

### Recalculation of Cumulative Point-hour Ratio (Fresh Start Rule) (Rule 3335-7-261)

An undergraduate student who re-enrolls in the University after an absence of five or more years may petition the dean or director of his enrollment unit to recalculate the cumulative point-hour ratio of his previous residency. If the petition is approved, all courses taken will remain on the permanent record. Those with marks of A, A-, B+, B, B-, C+, C, C-, EM, K, PA, or S, will be counted for credit only. No other marks will be counted for credit.

If the petition is approved, a student resumes his academic program with no cumulative point-hour ratio, and thereafter is subject to the conditions of warning, probation, and dismissal that govern all students (see Rules 3335-9-24 to 3335-9-28 of the Administrative Code).

Under the provisions of this rule a student, before graduation, must be re-enrolled for a minimum of 45 quarter credit hours and three academic quarters.

All courses ever taken at the University will be used in the calculation of the cumulative point-hour ratio required for the purposes of graduation with honors.

The Graduate School and graduate professional colleges may formulate appropriate modifications of this rule, subject to the approval of the Council on Academic Affairs, and shall publish the rule in their bulletins.

### Failure in a Required Course (Rule 3335-7-27)

An undergraduate or professional student who has not been dismissed from the University must repeat in a regularly scheduled class, at the first opportunity, a required course in which a mark of E has been received, unless an equivalent course is recommended and approved by the authorized representative of the dean or director of the enrollment unit.

A graduate student who has not been dismissed from the University must repeat in a regularly scheduled class a required course in which a mark of E has been received only if this is required by the student's adviser.

### Freshman Forgiveness Rule (Rule 3335-7-271)

(A) If a course in which an undergraduate student receives a grade of D+, D, or E, taken during the freshman year (the period during which the first forty-four credit hours are accumulated on the student's official permanent record) is repeated before the end of that student's sophomore year (when the student will have accumulated a total of eighty-nine credit hours), the original course credit and grade will be automatically excluded from the calculation of the student's cumulative point-hour ratio and deficiency points, but will remain on the student's official permanent record. This action will be subject to the following conditions:

- 1) If the grade in the original course was a D+ or D, a student may repeat the course for credit only upon the recommendation of the authorized representative of the dean, or director of the student's enrollment unit. Such recommendation must be obtained before noon of the third Saturday of the quarter in which the repeated course is taken.
- 2) The same course may be repeated only once under this rule.
- 3) This rule may be applied for a maximum of fifteen credit hours.

(B) The graduate school and graduate professional colleges may formulate appropriate modifications of paragraph (A) of this rule, subject to the approval of the council on academic affairs, and publish the rule in their bulletins.

### Repetition of Courses (Rule 3335-7-28)

Except as specified by Rule 3335-7-27 of the Administrative Code, undergraduate students who have received a mark of E or NP in a course at this university may repeat the course for credit at their option.

Undergraduate or professional students, as defined in Rule 3335-9-01 of the Administrative Code, who have received a mark of D+ or D in a course at this university may repeat the course for credit only upon the recommendation of the authorized representative of the dean or director of their enrollment unit.

Undergraduate or professional students, as defined in Rule 3335-9-01 of the Administrative Code, who have received a mark of A, A-, B+, B, B-, C+, C, C-, or PA in a course at this university or elsewhere may repeat the course only as auditors, in accordance with Rule 3335-7-29 of the Administrative Code.

A graduate student, as defined in Rule 3335-9-01 of the Administrative Code, may repeat for credit any course when approval is given by the student's adviser.

A student who has audited a course may subsequently repeat the course for credit only upon receiving permission of the authorized representative of the dean or director of the student's enrollment unit.

The credit hours for a repeated course shall in no case be counted more than once in meeting graduation requirements. When a student repeats a course, both grades appear on the student's record and both are used in computing the point-hour ratio, except as modified by Rule 3335-7-271 of the Administrative Code.

### **Admission to Courses as an Auditor (Rule 3335-7-29)**

An undergraduate or professional student may audit a course upon the approval of the professor in charge of the course and the dean of the college, or designee, in which the student is registered. (For repetition of courses, see Rule 3335-7-28 of the Administrative Code). A graduate student may audit a course upon the approval of the professor in charge of the course and the student's adviser.

### **Withdrawal from Courses or from the University (Rule 3335-7-32)**

Withdrawal from the University during a quarter, semester, or session, constitutes withdrawal from all courses in which a student is enrolled during that quarter, semester, or session. Upon official notification of the student's withdrawal from the University, the University registrar is authorized to enter the dated notation *withdrew* on the student's official permanent record.

To withdraw from any or all courses, a student must file the appropriate form with the authorized representative of the dean or director of the student's enrollment unit.

Until 5:00 p.m. of the third Friday of a quarter, semester, or session or the second Friday of a summer term, a student may withdraw from any or all courses which began in the same quarter, semester, session, or term, and no record for the course(s) will be entered on the student's official permanent record.

After 5:00 p.m. of the third Friday of a quarter, semester, or session and until 5:00 p.m. of the seventh Friday of a quarter, semester, or session, if a student withdraws from any or all courses which began in the same quarter, semester, or session, the University registrar is

authorized to enter the mark W on the student's official permanent record for the courses withdrawn.

After 5:00 p.m. of the seventh Friday of the quarter, semester, or session or the second Friday of a summer term, a student who, because of circumstances beyond his/her control, finds it necessary to withdraw from any or all courses, must file the appropriate petition with the authorized representative of the dean or director of the enrollment unit. Reasons not acceptable include (but are not limited to) the student's performance in the course(s), lack of preparation for the course(s), or dissatisfaction with the subject matter offered in the course(s). If the petition is approved, a copy will be filed with the University registrar who is then authorized to enter the mark W on the student's official permanent record and the instructor(s) of the course(s) will be so notified. If the petition is not approved, the student continues to be enrolled in the course(s) and a final mark must be submitted by the instructor(s). Withdrawal from any and all courses shall not be permitted after the last day of regularly scheduled classes except when the student experiences a genuine emergency after the regularly scheduled classes end and prior to sitting for the final examination in a given course or courses.

Withdrawal from any or all courses shall not be permitted after the final examination in that course has been given.

A student who stops attending a course (or courses) and does not officially withdraw from it (them) shall have the appropriate mark as submitted by the instructor entered on the student's official permanent record for the course(s). Such a mark shall be based on the grading criteria used to evaluate all students in the course.

Graduate professional colleges shall formulate rules to govern withdrawal of their students from courses in their respective curricula, subject to the approval of the Council on Academic Affairs, and publish these rules in their respective bulletins.

For provision regarding return of fees, when applicable, see Rule 3335-9-18 of the Administrative Code. This information may also be found in the Master Schedule of Classes Bulletin.

### **Conditions and Procedures for Disenrollment from a Course (Rule 3335-7-33)**

Subject to final approval by the Ohio State University Board of Trustees.

(A) The instructor (or in the case of a graduate teaching associate, the supervising faculty member), the chairperson of the instructor's department (with the agreement of the instructor), or other appropriate administrative official may disenroll a student from a course if:

1) After the third instructional day of the quarter, semester, session, or term, the first Friday of the quarter, or the student's second scheduled class session of the course, whichever occurs first, the student fails to attend the scheduled course without giving prior notification to the instructor. Under this paragraph, no student may be disenrolled from a course until after the first course meeting following the student's registration. When the department elects to use this procedure, the instructor, the chairperson, or other appropriate administrative official shall notify the student's enrollment unit. The enrollment unit will notify the student and take appropriate action to remove the student from the course.

Since not all departments exercise the option to disenroll students in all courses, this rule does not relieve the student of the responsibility for dropping a course the student is not attending.

2) The student enrolls to audit a course without the instructor's approval, or fails to meet the prerequisites of the course. Disenrollment procedures shall be the same as in paragraph (A) (1) of this rule.

3) Before the third Friday of a quarter, semester, or session, or the second Friday of a summer term, and following completion of a placement examination, or another appropriate measure of preparation or ability, the student is judged to be registered in an inappropriate course. The department or school offering the course may then instruct the secretary of the college or school in which the student is enrolled to change the student's registration either to a more elementary or more advanced course.

4) Disenrollment is effective upon action of the instructor, department chairperson, or other appropriate administrative official.

5) Credit for all rescheduled courses resulting from action under paragraph (A) (3) of this rule shall count toward the fulfillment of graduation requirements unless the student has previously earned university or college credit in a course having substantially the same subject matter content or the substituted course is one which the department or school, with the approval of the council on academic affairs, has established for students with inadequate preparation for college level courses of that department or school.

6) If a student who has enrolled to audit a course fails to complete the requirements for audit specified by the instructor and also fails to withdraw from the course, the instructor shall



so inform the Office of the University Registrar when marks are reported for the quarter, semester, or session. That office will then disenroll the student from the course, removing the course from the student's permanent record, and will notify the student and the student's college of the action taken.

(B) After investigation, including consultation with the instructor, the student in question, and utilizing other University resources, as desirable, the chairperson (or other appropriate administrative official) may disenroll a student from a course if the student presents a clear and present threat of bodily harm or injury to the instructor or fellow students, or, after warning, continues to engage in disruptive conduct, either of which results in impairment of teaching or learning processes:

1) If, after attempting to resolve the difficulty by informal means, the department chairperson (or other appropriate administrative official) deems disenrollment necessary, the affected student shall be notified in writing. The notice shall be delivered by hand or sent through ordinary mail to the student at the last address supplied pursuant to Rule 3335-9-09 of the Administrative Code. Copies of the disenrollment action shall be sent to the dean of the instructional college, the dean of the student's college, the Office of the University Registrar, and the Office of Student Affairs.

2) The student may appeal to the senior vice president for academic affairs and provost or designee for waiver of disenrollment under paragraph (B) (2) of this rule, provided the appeal is filed within 10 days of the disenrollment action. The senior vice president for academic affairs and provost shall make final determination on the appeal within seven days.

3) Disenrollment is effective upon the action of the department chairperson (or other appropriate administrative official), unless reversed by the vice president for academic affairs and provost, or designee.

(C) For disenrollment, exclusive of audit under paragraphs (A) and (B) of this rule, the University registrar shall enter on the student's official permanent record:

1) No mark, if the disenrollment occurs before five p.m. of the third Friday of a quarter, semester, or session course, or the second Friday of a summer term course; or

2) The mark, W, if the disenrollment occurs after five p.m. of the third Friday of a quarter, semester, or session course, or the second Friday of a summer term course.

## Admission

### Classification of Students for Admission (Rule 3335-9-01)

Students shall be classified as:

- Undergraduate students: regular or special. This shall include students registered in the colleges of Agriculture, Arts, Biological Sciences, Business, Home Economics, Humanities, Mathematical and Physical Sciences, Social and Behavioral Sciences, the University College, the division of pre-professional education of the College of Education, the pre-engineering division of the College of Engineering, and the division of Continuing Education.
- Graduate students: regular, special, graduate nondegree, conditional, or transient. The provisional classification is used in conjunction with the regular, special, and conditional classifications.
- Professional students: regular or special. This shall include students either regularly or specially registered in the colleges or divisions of a college which admit after completion of a pre-professional curriculum.
- Transient students. This shall include regular enrollees of other institutions who with the recommendation of their college authorities enter this university for a brief residence (usually one quarter, semester, session, or term) without transfer of credits.

- Auditors. This shall include persons who desire to attend classes without receiving credit for any courses taken.

## Administrative hold

### Administrative holds (Rule 3335-9-16)

With the approval of the vice president for student affairs, an administrative hold may be placed on the records or accounts of any person who fails to comply in a reasonable period of time with an obligation imposed under University rules or who has an overdue debt or fine. An administrative hold will cause certain services to be withheld, including, but not limited to: obtaining current quarter grades, registering or enrolling, being certified as eligible to obtain a degree or certificate, receiving a transcript, borrowing books or equipment, or participating in discount plans available to faculty, staff, or alumni.

The unit originating an administrative hold on the records or accounts of any person shall notify the person in writing of the obligation that is overdue by providing another itemized billing or list of actions requested, specifying when the administrative hold will become effective, and indicating the name and method of contacting an individual who can provide additional information. Any disputes concerning the legitimacy of a hold or its processing will be resolved by the University Registrar.

## Improper Registration

### Improper Admission or Registration (Rule 3335-9-20)

Admission or registration may be cancelled by the Director of Admissions or the University Registrar in cases of improper registration or when false or incomplete information is provided on the application for admission, registration forms, or other official documents. No credits earned subsequent to such cancellation and prior to proper admission or registration shall be entered upon the permanent record of the student. Students whose admission or registration is cancelled are not entitled to any refund of fees.

## Absences

### Absences (Rule 3335-9-21)

Each department or school may make its own rules relative to occasional absences by students from scheduled activities. If, however, a student is absent from a course to such an extent as to imperil his credit, or is notably irregular in attendance, it shall be the duty of the instructor concerned to report the facts promptly to the dean of the college in which the student is enrolled. The dean may take such action as he deems appropriate.

## Warning and Dismissal

### Minimum Scholastic Requirements (Synopsis of Rule 3335-9-23)

The academic standards controlling warning, probation, and dismissal of professional and graduate students shall be established by rule of the faculties of the college in which the professional student is registered, or of the Graduate School if the student is a graduate student; provided, however, that an undergraduate professional student shall not be dismissed from the University unless the student has 15 or more deficiency points which are computed on the basis of the entire undergraduate program.

A transfer student from another university who is admitted to advanced standing in this University shall have the point-hour ratio and deficiency points computed only upon work done at this University.

In order to remain in good academic standing in the University, an undergraduate student must maintain a cumulative point-hour ratio of at least 2.00. Deficiency points are applied only to the record of students whose point-hour ratio is below 2.00 and are defined as the number of credit points students would have to earn to bring their point-hour ratio up to that level. Deficiency points may be calculated by subtracting the number of credit points earned from twice the total number of credit hours attempted for which calculable grades (A, A-, B+, B, B-, C+, C, C-, D+, D, or E) were given.

### Academic Warning (Rule 3335-9-24)

Any student who has never attended another college or university and who seeks to enroll as a new freshman in this university shall be placed on special warning when his application for admission is received and processed if his academic credentials indicate the probability of low achievement. He shall be so informed before final registration and the payment of fees are completed, except as provided in Rule 3335-9-27 of the Administrative Code. The fact that special warning has been given shall be made known to the office of the college or school to which he seeks admission.

If, at the end of any quarter, a student subject to the provisions of Rule 3335-9-23 of the Administrative Code has accumulated fewer than 15 deficiency points, he shall receive a warning from the dean of his college or director of his school, except as provided in Rule 3335-9-27 of the Administrative Code.

### Academic Probation (Rule 3335-9-25)

Any student who has accumulated 15 or more deficiency points shall be placed on probation. The probation shall continue provided the student's college considers the student's progress to be satisfactory and shall be removed when the deficiency points are fewer than 15. The student shall be notified of probationary status by the dean of the college or the director of the school in which the student is registered, except as provided in Rule 3335-9-27 of the Administrative Code. Such notification shall include a clear statement of what shall be considered to be satisfactory progress.

Probation by special action: If at any time the preparation, progress, or success of a student in an academic program is determined to be unsatisfactory, the college or school in which the student is registered shall be empowered to place the student on academic probation. An undergraduate student admitted with conditions and who has not satisfied the conditions after earning 30 quarter credit hours through regular course enrollment at this university shall be placed on academic probation.

Requirements and definition: In order to remain in good standing in the University a student must maintain a point-hour ratio (see Rule 3335-7-26 of the Administrative Code), of at least 2.00. Deficiency points are applied only to the records of students whose point-hour ratio is below 2.00 and are defined as the number of credit points a student would have to earn to bring the student's point-hour ratio up to that level. Deficiency points may be calculated by subtracting the total number of credit points earned from twice the total number of credit hours attempted for which calculable grades (A, A-, B+, B, B-, C+, C, C-, D+, D, or E) were given.

### Academic Dismissal (Rule 3335-9-26)

If the student's college or school considers a student's progress as unsatisfactory in meeting the conditions placed on his probation, the college or school shall be empowered to dismiss him from the University. An exception to this authority for undergraduate professional students shall be in accordance with paragraph (A) of Rule 3335-9-23 of the Administrative Code. Notice of the dismissal shall be sent to the student by the dean of the college or the director of the school in which the student was registered for the quarter, except as provided in Rule 3335-9-27 of the Administrative Code. No student shall be subject to academic dismissal unless he is currently on probation.

### Notice of Dismissal (Rule 3335-9-27)

Notice of dismissal from the University shall be sent by the dean of the college in which the dismissed student is registered.

### Reinstatement after Academic Dismissal (Rule 3335-9-28)

Any student who may be reinstated by a college or school following academic dismissal shall be subject to such special requirements as may be determined appropriate by the dean of the college or director of the school. If the performance record of any reinstated student does not meet the conditions of probation specified at the time of reinstatement, then the college or school in which he is registered shall determine whether the student is to be dismissed or continued on probation.

## Conditional/Unconditional Admission

For unconditional admission as an undergraduate student, applicants who graduate from high school on or after April 1, 1984, and transfer students with less than 45 transferable hours are required to have at least 15 high school college preparatory units distributed as follows: English-four units; Mathematics-three units; Social Sciences-two units; Natural Sciences-two units; Foreign Language-two units; visual or Performing Arts-one unit; and one additional unit from any of the above-mentioned subject areas. At the time students are notified of admission, they are also notified of any deficiencies. Academic advisors are available to help plan course work to remove conditions and answer any questions.

Admission conditions are satisfied by earning college credits in the subject areas of deficiency. Such credits may be earned by satisfactory completion of courses at Ohio State, by satisfactory completion of equivalent course work at other colleges, or by examination for credit. Admission conditions must be satisfied within the first 30 credit hours earned at Ohio State. Credit hours used to remove admission conditions are not counted toward the minimum number of credit hours required for graduation.

Ohio State courses which may be used to fulfill admission conditions in the foreign languages, the natural sciences, the social sciences, and the visual and performing arts are indicated in the following lists. For specific course descriptions, please see the course offerings listing in this book.

### Foreign Languages

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 (including the decimal subdivisions such as 101.51, etc.) and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.

Completion of 102 or equivalent or placement into 103 is required to fulfill foreign language conditions. Not all of the following languages are offered each quarter.

Arabic	Persian
Bulgarian	Polish
Chinese	Portuguese
Czech	Romanian
French	Russian
German	Serbo-Croatian
Greek	Spanish
Hausa	Swahili
Hebrew	Swedish
Hungarian	Turkish
Italian	Ukrainian
Japanese	Yoruba
Korean	Yiddish
Latin	Zulu
Modern Greek	

## Natural Sciences

In addition to the courses listed below, any course approved for meeting the natural sciences component of the Basic Education Requirements or the General Education Requirements may be used to fulfill admission conditions.

Agronomy 200, 240  
 Anthropology 200  
 Astronomy 150, 155, 161, 162, 291, 292  
 Biochemistry 105, 211  
 Biology 101, 102, 113, 114, H115, H116  
 Chemistry 101, 102, 121, 122, H201, H202  
 Entomology 100, 200, 361  
 Geography 220  
 Geological Sciences 100, 110, 121, 122, 203, 204, 206, 210  
 Microbiology 301, 509  
 Molecular Genetics 140, 201  
 Natural Resources 100  
 Pharmacy 200  
 Physics 100.01, 100.02, 103, 104, 111, 112, 131, 132  
 Plant Biology 101, 102, 201, 202, 210, 313  
 Zoology 201, 220, 232, 235, 313

## Social Sciences

In addition to the courses listed below, any course approved for meeting the social sciences component of the Basic Education Requirements or the General Education Curriculum may be used to fulfill admission conditions.

Agricultural Economics 110, 200, H200  
 Anthropology 201, 202  
 Black Studies 130.01, 161, 222, 248, 261, 282  
 Business Administration: Management and Human Resources 211  
 Communication 140  
 Economics 100, 200, 206  
 Family Resource Management 260  
 Geography 200, 240  
 History 111, 112, 131, 132, 151, 152, 201, 211, 212, 215, 220, 231, 233, 237, 251, 252, 254, 258, 265, 266, 268, 281, 286, 290  
 Journalism 101  
 Landscape Architecture 201  
 Political Science 101, 165, 201, 202, 210  
 Psychology 100, 101, 210, 230  
 Recreation Education 200  
 Rural Sociology 105, 110  
 Sociology 101, 202, 209, 210  
 Textiles and Clothing 272

## Visual and Performing Arts

Architecture 200, 201, 202  
 Art 170, 172, 182, 190, 231, 240, 242, 278, 290  
 Art, College of the 160  
 Black Studies 180, 244, 271, 272  
 Chinese 283  
 Communication 105, 110  
 Dance 200  
 Engineering Graphics 110, 121, 122, 141, 142, 166, 167  
 History of Art 111, 210, 211, 212, 216  
 Industrial Design 160  
 Landscape Architecture 200, 202, 203, 204, 271  
 Music 101.01, 101.02, 102.01, 102.02, 141, 180, 181, 182, 183, 184, 186, 188.01, 188.02, 188.03, 188.04, 191, 195, 196.01, 196.02, 196.03, 196.04, 197, 199.01, 199.02, 199.03, 199.04, 199.05, 199.06, 199.07, 199.10, 199.11, 244  
 Photography and Cinema 201, 220  
 Physical Education 153.01, 153.02, 153.03, 154.04, 153.05, 153.06, 153.07, 163.01, 163.02, 163.04, 163.05, 163.06, 181.01

Speech and Hearing Science 135  
 Textiles and Clothing 270  
 Theatre 100, 205, 210, 220, 221, 222, 271, 280

## Curricular information

At the time of printing of this Bulletin, the University is in the process of implementing a new General Education Curriculum. Course numbers, credit hour values, and course content listed in this Bulletin are subject to change. For more specific information, please direct inquiries to the appropriate college office.

## College or School Requirements

Each college or school has certain requirements which must be met by every student seeking to earn a degree in that college or school. The specific course requirements for the curricula administered by a given college or school can be found in the bulletin for that college or school. In addition to these, the University has established certain requirements outlined below.

## University Required Courses

### General Education Curriculum Requirements (GEC)

In addition to any college or school requirements, every undergraduate student must complete a body of course work that assures a broad acquaintance with the basic areas of academic study. Courses which may be used to meet the GEC are so designated throughout this bulletin. Not all GEC courses are acceptable in all curricula. Students should consult their specific college or school publications or their advisors before scheduling courses to be applied to this requirement.

The objectives of this part of the curriculum, as set forth by the University faculty, are as follows:

There are certain capacities and understandings, certain qualities, abilities, and characteristics which are part of what we understand as the liberating process a university is particularly suited to develop, nourish, and hone. Primary among these capacities is the ability to write and speak with clarity and precision; to read and listen critically and with comprehension. Of the same order is the ability to engage in careful logical thinking and critical analysis, including the abilities that permit intelligent responses to problems and arguments which involve quantitative data.

An understanding of and appreciation for the important modes of human thought and inquiry are crucial characteristics of a University education. An understanding of the methods of modern science and social science, the effect of science and technology on the natural and social environment, and the nature of mathematical knowledge constitutes part of this knowledge. The development of a refined historical, artistic, and literary consciousness is a further part. A university education should also develop and sharpen the capacity and confidence to make informed and discriminating ethical and aesthetic judgments.

We believe that an education in a university in our own nation today should foster an understanding of American institutions and the pluralistic nature of American society. It should also promote an understanding of the global interdependence of the modern world and should ensure facility with at least one language other than English. Finally, we think that an American university should seek to develop a deep appreciation for the cultural traditions that have formed and informed our nation and to develop a sense of the place of other cultures in world history.

## University Class Ranking System

Student rank in all the undergraduate colleges is based on total credit hours completed and recorded.

### Class Standing   Credit Hours Earned   Rank

Freshman	0 through 44	1
Sophomore	45 through 89	2
Junior	90 through 134	3
Senior	135 and up	4

Rank begins anew when the student enrolls in Dentistry, Law, Medicine, Optometry, Pharmacy, Veterinary Medicine, or the Agricultural Technical Institute.

Students enrolled in the Graduate School receive the rank of either M-Master's (0-50 earned hours) or P-PhD (51 or more earned hours or master's degree).

Should there be any doubt concerning the correctness of one's rank, the student should consult with the appropriate enrollment unit.

## Retroactive Graduate Credit

Students registered in an undergraduate college, in Continuing Education, or in a professional college cannot receive graduate credit for courses taken when the student is not enrolled in the Graduate School.

## Graduate Credit for Undergraduates

An undergraduate may petition to take certain courses for graduate credit provided that:

- the student is a senior;
- the credit for the course is not used to meet baccalaureate degree requirements;
- the student's cumulative point-hour ratio is 3.00 or above;
- the student completes a Senior Petition form and secures permission by the end of the first day of classes from: the secretary of the student's college or school, the instructor in charge of the course, and the Graduate School; and
- the course is offered for graduate credit.

These courses may not be counted toward a graduate degree until the student has been admitted to the Graduate School, and until the Graduate Studies Committee accepts them and notifies the Graduate School. The hours are counted in the student's graduate earned and cumulative credit hours, and the grades are counted in the student's graduate cumulative point-hour ratio. Not more than 15 graduate credit hours may be completed under the Senior Petition.

## Degrees and Certificates (Rule 3335-9-29)

Degrees and certificates shall be awarded undergraduate and professional students by the Board of Trustees upon recommendation of the college or school faculties and the University Senate, transmitted to the Board by the President.

Degrees and certificates shall be awarded graduate students by the Board of Trustees upon recommendation of the Council on Research and Graduate Studies and the University Senate, transmitted to the Board by the President. (See Rule 3335-5-35 of the Administrative Code.)

## Requirements for the Associate of Arts Degree

To obtain the Associate of Arts degree, undergraduate students who have attended, or are attending, the Lima, Mansfield, Marion, or Newark campuses must:

- Successfully complete at least 90 quarter credit hours of university credit.

These 90 hours of credit may include a maximum of 12 quarter hours of technical special credit. Remedial courses (English

060, 100.01, 100.02, and 100.03; Math 040, 050, 052, 053, 075, 076, 100, 102, and 104 and courses listed in the *Course Offerings Bulletin* as not counting toward the baccalaureate degree) may not be applied.

Credit hours earned to satisfy admission conditions are not counted toward the minimum 90 hours required.

Repeated courses shall be counted only once.

Level III or R placement on the Ohio State Math Placement Exam or the completion of Math 075 or 076 or 102 or above (excluding Math 180) is required.

- Successfully complete a core of 50 hours of requirements (with no overlap between areas) distributed as follows: English 110 or 111 (5), humanities (10-15), foreign language (0-10), social science (10-15), natural science (10-15), and analytical skills/mathematics (0-10).

Courses used to satisfy the humanities, social science, and natural science components must be chosen from the list of courses approved as University GEC requirements. Similarly, courses used to satisfy the analytical/mathematics skills component must be chosen from the list of courses approved for Category II of the Liberal Arts Requirements of the Colleges of the Arts and Sciences, plus Mathematics 105 and 106. If a student should decide to pursue a baccalaureate degree after obtaining the Associate of Arts degree, the student would be required to fulfill the GEC requirements of the degree-granting enrollment unit. In accordance with Faculty Rule 3335-7-21, the Pass/Non-Pass Option may not be used for any of the core courses.

- Maintain a cumulative point-hour ratio of at least 2.00 on all work attempted at Ohio State at the time of, or after the completion of, all other requirements.
- Complete 30 of the last 45 quarter credit hours through regular course enrollment at Ohio State.
- Complete 15 of the required 90 quarter credit hours on a regional campus.
- Complete a minimum of three quarter credit hours in regular course enrollment at Ohio State Summer Quarter 1980 or thereafter.
- Not have received a baccalaureate or a professional degree from an accredited institution.
- Have filed an application for the degree in accordance with rules and procedures prescribed by the Colleges of the Arts and Sciences. Application must be made within four years after the requirements have been completed, assuming no other degrees have been awarded in the interim.

## Requirements for an Undergraduate Baccalaureate Degree (Rule 3335-9-30)

To obtain an undergraduate baccalaureate degree from this University, an undergraduate student must:

- Have earned a minimum of 45 quarter hours credit through regular course enrollment at this University.
- Have been enrolled in the college, the Colleges of the Arts and Sciences, or the school recommending that degree during the last quarter necessary to complete degree requirements. The executive committee of the college, the Colleges of the Arts and Sciences, or the school recommending the degree may, on petition by the student, waive this requirement.
- Have satisfactorily completed the number of credit hours required for the curriculum being pursued. The minimum number of credit hours required in each curriculum shall include the credit hours required under Rules 3335-7-06 and 3335-7-07 of the Administrative Code. Credit hours required to satisfy admission conditions shall not be used to satisfy the requirements of Rules 3335-7-06 and 3335-7-07 of the Administrative Code. Credit hours are considered as "satisfactorily completed" only if the student has received, at this university the mark A, A-, B+, B, B-, C+, C, C-, D+, D, EM, K, PA, or S in those hours (see Rule 3335-7-21 of the

Administrative Code).

(D) Have earned credit points (see Rule 3335-7-25 of the Administrative Code) totaling at least twice the number of credit hours attempted at this university for which calculable grades (A, A-, B+, B, B-, C+, C, C-, D+, D, or E) were given.

(E) Have satisfactorily met all additional college and curricular requirements for the degree involved.

(F) Have filed an application for the degree in accordance with rules prescribed by the college or school.

(G) Except for paragraph (B) of this rule, waiver of any part of this rule in the case of individual students may be made only by the Council on Academic Affairs following prior approval by the appropriate executive committee. The senior vice president for academic affairs and provost shall transmit all affirmative actions of the Council on Academic Affairs under this paragraph to the secretary of the student's college and to the University registrar for notation on the student's permanent record.

### **Requirements for a Graduate Degree (Rule 3335-9-31)**

To obtain a graduate degree from this university, a graduate student must have met the minimum requirements established by the Council on Research and Graduate Studies and approved by the Board of Trustees, and have filed an application for the degree in accordance with rules prescribed by the Council on Research and Graduate Studies.

### **Requirements for a Professional Degree (Rule 3335-9-32)**

To obtain a professional degree from this university, a student must meet the minimum requirements established by the college or school recommending the degree. In establishing such minimum requirements, the college or school shall include or exceed the minimum requirements stipulated by the appropriate accrediting body. Such graduation requirements shall be subject to approval by the Council on Academic Affairs and shall be filed with the secretary of the Board of Trustees.

Waiver of minimum requirements may be made by the faculty of the college or school recommending the degree or by a committee approved by that faculty. Requests for such waiver may be initiated by student petition or by the dean or director. The Council on Academic Affairs shall be notified at least quarterly of each such action.

### **Requirements for Certificate of Study (Rule 3335-9-321)**

A certificate of study may be awarded concurrent with or following the student's receipt of a baccalaureate degree. Award of such certificates shall attest to demonstrated competence in a coherent academic curriculum, program or area of study.

To obtain a certificate a student must:

- Have been or be enrolled in the University during the last quarter of work necessary to complete the certificate requirement. In addition, the student must meet any residency requirement established by the college, the Colleges of the Arts and Sciences, or the school recommending the certificate.
- Have earned through regular course enrollment a minimum of 45 quarter hours credit in an approved certificate program. No certificate program shall require enrollment in and credit for more than 90 quarter hours. At least one-third of all quarter hours credit earned in a certificate program shall be at the 500-level or above. No more than five credit hours in the certificate program may be counted toward the student's undergraduate major or minor. Credit hours used to fulfill the requirements for one certificate may not be counted toward any other certificate.
- Have earned the mark of A, A-, B+, B, B-, C+, C, or C- for all courses counted toward the completion of the certificate requirements.

- Have attained an undergraduate cumulative grade point average of 2.00 (or a graduate cumulative grade point average of 3.00, as appropriate) in courses used to satisfy the certificate program requirements.

- Have satisfactorily met all additional college or school requirements for the certificate involved.

- Have filed an application for the certificate in accordance with rules prescribed by the college, Colleges of the Arts and Sciences, or school.

Waiver of any part of this rule in the case of individual students may be made only by the Council on Academic Affairs upon recommendation of the executive committee of the college, colleges, or school. The senior vice president for academic affairs and provost shall transmit all affirmative actions of the Council under this section to the secretary of the student's enrollment unit and to the University registrar for notation on the student's permanent record.

The colleges of Dentistry, Law, Medicine, Optometry, and Veterinary Medicine, and the Graduate School may establish requirements and conditions, rather than those above, for certificates of study. Such requirements must be approved by the Council on Academic Affairs.

Authority for approval of all certificate programs shall rest with the Council on Academic Affairs. Proposals for graduate certificates must also receive the approval of the Council on Research and Graduate Studies. The president of the University and the University Senate shall be regularly informed of Council actions in this regard.

### **Standards for Honors at Graduation (Rule 3335-9-33)**

Degrees *cum laude*, *magna cum laude*, and *summa cum laude* may be granted for exceptional achievement in the curriculum of each enrollment unit as judged by that unit in terms of its own standards providing that the number of students accorded these honors does not exceed 10 percent, and that the number of students accorded *summa cum*

*laude* and *magna cum laude* does not exceed six percent, and the number of students accorded *summa cum laude* does not exceed three per cent, of the graduating classes of the enrollment unit and that eligibility for these honors be based on a minimum of 90 credit hours of course enrollment at this university.

Standards for graduation "with distinction in [special subject(s)]" and "with honors in [ ]" shall be as adopted by the Council on Academic Affairs.

Beyond these minimal requirements the enrollment units may establish additional stipulations for graduation *cum laude*, *magna cum laude*, and *summa cum laude*.

## **Institutional Transfer**

The Ohio Board of Regents, following the directive of the Ohio General Assembly, has developed a new statewide policy to facilitate movement of students and transfer credits from one Ohio public college or university to another. The purpose of the State Policy is to avoid duplication of course requirements and to enhance student mobility throughout Ohio's higher education system. Since independent colleges and universities in Ohio may or may not be participating in the transfer policy, students interested in transferring to an independent institution are encouraged to check with the college or university of their choice regarding transfer agreements.

## Transfer Module

The new Ohio Board of Regents' Transfer and Articulation Policy established the Transfer Module, which is a specific subset or the entire set of a college or university's general education requirements. The Transfer Module contains 54-60 quarter hours or 36-40 semester hours of specified course credits in English composition, mathematics, fine arts, humanities, social science, behavioral science, natural science, physical science, and interdisciplinary course work.

A transfer module completed at one college or university will automatically meet the requirements of the transfer module at the receiving institution, once the student is accepted. Students may be required, however, to meet additional general education requirements that are not included in the Transfer Module.

## Conditions for Transfer Admission

Students meeting the requirements of the Transfer Module are subject to the following conditions:

1. The policy encourages receiving institutions to give *preferential consideration* for admission to students who complete the Transfer Module and either the Associate of Arts or the Associate of Science degrees. These students will be able to transfer all courses in which they received a passing grade of D or better. Students must have an overall grade point average of 2.00 to be given credit for the Transfer Module.
2. The policy also encourages receiving institutions to give *preferential consideration* for admission to students who complete the Transfer Module with a grade C or better in each course and 90 quarter hours or 60 semester hours.

Students must have an overall grade point average of 2.00 to be given credit for the Transfer Module and only courses in which a C or better has been earned will transfer.

3. The policy encourages receiving institutions to admit on a *non-preferential consideration* basis students who complete the Transfer Module with a grade of C or better in each course and less than 90 quarter hours or 60 semester hours. These students will be able to transfer all courses in which they received a grade of C or better.

Admission to a given institution, however, does not guarantee that a transfer student will be automatically admitted to all majors, minors, or fields of concentration at that institution. Once admitted, transfer students shall be subject to the same regulations governing applicability of catalog requirements as all other students. Furthermore, transfer students shall be accorded the same class standing and other privileges as native students on the basis of the number of credits earned. All residency requirements must be successfully completed at the receiving institution prior to the granting of a degree.

## Responsibilities of Students

In order to facilitate transfer with maximum applicability of transfer credit, prospective transfer students should plan a course of study that will meet the requirements of a degree program at the receiving institution. Specifically, students should identify early in their collegiate studies an institution and major to which they desire to transfer. Furthermore, students should determine if there are language requirements or any special course requirements that can be met during the freshman or sophomore years. This will enable students to plan and pursue a course of study that will articulate with the receiving institution's major. Students are encouraged to seek further information regarding transfer from both their adviser and the college or university to which they plan to transfer.

## Appeals Process

A multi-level, broad-based appeal process is required to be in place at each institution. A student disagreeing with the application of transfer credit by the receiving institution shall be informed of the right to appeal the decision and the process for filing the appeal. Each institution shall make available to students the appeal process for that specific college or university.

If a transfer student's appeal is denied by the institution after all appeal levels within the institution have been exhausted, the institution shall advise the student in writing of the availability and process of appeal to the state level Articulation and Transfer Appeals Review Committee.

The Appeals Review Committee shall review and recommend to institutions the resolution of individual cases of appeal from transfer students who have exhausted all local appeal mechanisms concerning applicability of transfer credits at receiving institutions.

## The O.S.U. Transfer Module

Instructions: The Transfer Module must include 54 quarter credit hours of introductory courses in the following areas: English composition, mathematics, arts/humanities, social and behavioral sciences, and natural and physical sciences. Students should follow these directions in selecting courses for the Transfer Module.

1. Select minimum area requirements from introductory courses marked with an asterisk (\*) in each section.

2. Complete the required total minimum hours of the Transfer Module from the remaining courses on this list.
- NOTE: To assure the most efficient transfer of academic credit, be sure to check with an academic adviser to select the courses most appropriate for the general education requirements and/or the major at the transfer college or university selected.

ENGLISH COMPOSITION: (select a minimum of 5 quarter credit hours from the starred areas)

- \* English 110 (5) or 111 (5)
- \* One of the following (5 credit hours each):  
Ag. Comm. 367; Art Edu. 367; Comm. 305, 316; Comp. Stds. 367.02; Econ. 367.01-367.03; Engl. 367.01-367.06; Home. Ec. Edu. 367; Natrl. Resour. 367; Physics 367; Theat. 367.01-367.02; Wom. Stds. 367

MATHEMATICS (select a minimum of 3 quarter credit hours from the starred areas)

- \* Mathematics 116
- \* Mathematics 130
- \* Mathematics 148
- \* Mathematics 150
- \* Computer and Information Science, any course at the 200 level or above offered by the Department of Computer and Information Science
- \* Philosophy 150, 250
- \* Statistics, any course offered by the Department of Statistics

ARTS/HUMANITIES (select a minimum of 9 quarter credit hours from the starred areas; Select from at least two areas of study; at least one of the courses must be a literature (\*) course)

Arabic 241, 371\*, 372\*

Art Education 367

- \* Arts, College of the 160, 161



- Black Studies 251\*
- Chinese 232, 251\*, 501\*, 502\*, 503\*, 504\*
- Classics 101\*, 102\*, 222\*, 224, 225
- Communication 311
- \* Comparative Studies in the Humanities 101\*, 102.01\*, 102.02\*, 103\*, 104<sup>o</sup>, 301<sup>o</sup>, 308<sup>o</sup>, 317
- Dance 200
- East Asian Languages and Literatures 131, 341
- \* English 201\*, 202\*, 220\*, 260\*, 261\*, 262\*, 270\*, 275\*, 280\*, 281\*, 290\*, 373\*
- German 291\*, 292\*, 299
- Hebrew 241, 370\*, 372\*
- \* History 111, 112, 131, 132, 151, 152, 171, 172, 200.01, 200.02, 251
- \* History of Art 210, 211, 212, 213, 216, 250, 505, 519, 520, 530, 576
- Japanese 231, 251\*, 252\*
- Jewish Studies 201
- Judaic and Near Eastern Languages and Literatures 271\*
- Modern Greek 241, 371\*
- \* Music 140, 141, 341, 342, 343, 346, 347, 349
- Persian 241, 371\*
- \* Philosophy 101, 130, 230, 240, 270
- Russian 135, 250\*
- Scandinavian 222\*
- Slavic Languages and Literatures 130, 245
- Spanish 151
- \* Theatre 100
- Turkish 241, 371, 372\*
- Women's Studies 201, 317
- Yiddish 241, 371\*

**SOCIAL AND BEHAVIORAL SCIENCES** (select a minimum of 9 quarter credit hours from the starred areas; select from at least two areas of study)

- Agricultural Economics 200
- \* Anthropology 201, 202, 421.08
- \* Economics 200
- \* Geography 200, 240
- \* International Studies 201, 230, 231, 245, 250
- Linguistics 202, 261, 265, 271
- \* Political Science 100, 101, 145, 165, 201, 210, 245
- \* Psychology 100
- Rural Sociology 105
- Social Work 230
- \* Sociology 101, 210, 345, 370, 380, 462, 463
- Women's Studies 210

**NATURAL AND PHYSICAL SCIENCES** (select a minimum of 9 quarter credit hours from the starred areas; at least one course must be a laboratory (\*) course)

- Astronomy 150, 161, 162
- \* Biology 101\*, 102, 113\*, 114\*
- \* Chemistry 101\*, 102\*, 121\*, 122\*
- Geological Sciences 100\*, 121\*, 203\*
- \* Physics 101\*, 102\*, 103, 104, 111\*, 112\*, 131\*, 132\*
- \* Plant Biology 101, 102\*



## Course Offerings

Course information (title, credit hours, level, description, etc.) starts on page 21. The most current information regarding new courses, changes to existing courses, credit hours, sections, days, times, buildings, room, and instructors may be found in the quarterly Master Schedule of Classes Bulletin.

### Sample Course Listing

#### A 444+\* Principles of Animal Nutrition U 5

B A study of fundamental principles of nutrition in mammals and birds.

C Su (1st term), Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. H444 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Chem 102 or 122 and Math 148 or equiv. Not open to students with credit for Animal Sc 444 or Pltry Sc 444. Open only to majors in animal nutrition. Repeatable to a maximum of 10 cr hrs; subdivisions not repeatable. Cross-listed in Animal Science and Poultry Science. GEC course.

#### D 444.01 Principles of Animal Nutrition I 444.02 Principles of Animal Nutrition II

### Explanation of a Course Listing

#### A 444+\* Principles of Animal Nutrition U 5

**Course number:** 444

A dagger (+) denotes that the course will not be offered this year. An asterisk (\*) indicates that the course is offered every other year.

**Course title:** Principles of Animal Nutrition

**Instructional Level:** U

U = Undergraduate

UG = Advanced undergraduate and graduate

G = Graduate

P = Professional

**Credit hours:** 5

B A study of fundamental principles of nutrition in mammals and birds.

**Course description:** A study of fundamental principles of nutrition in mammals and birds.

C Su (1st term), Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. H444 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Chem 102 or 122 and Math 148 or equiv. Not open to students with credit for Animal Sc 444 or Pltry Sc 444. Open only to majors in animal nutrition. Repeatable to a maximum of 10 cr hrs; subdivisions not repeatable. Cross-listed in Animal Science and Poultry Science. GEC course.

**Quarters of offering:** Su (1st term), Au, Wi, Sp

Su = Summer

Au = Autumn

Wi = Winter

Sp = Spring

**Classroom and laboratory hours:** 4 cl, 1 2-hr lab.

Course credit is earned through satisfactory completion of course work which may involve classroom, laboratory, bio-learning center, computer-assisted instruction, or field trip attendance.

**Honors statement:** H444 (honors) may be available to students enrolled in an honors program or by permission of dept.

**Prerequisite(s):** Chem 102 or 122 and Math 148 or equiv.

The course number(s) or other information indicates the preparation or classification required to enroll in the course. If no department name is listed, the number(s) refers to the specific course within the same department. If a class standing (freshmen, sophomore, junior, senior) or rank (1st, 2nd, 3rd, 4th yr standing) is listed, only students with that or higher level are eligible for enrollment. Enrollment in a course requires the successful completion of all prerequisites or their equivalents. The department, school, or college office should be consulted in case of questions of eligibility to take a course.

**Exclusion or limiting clause:** Not open to students with credit for Animal Sc or Pltry Sci 444. Open only to majors in animal nutrition.

**Repeatability clause:** Repeatable to a maximum of 10 cr hrs; subdivisions not repeatable.

Indicates the maximum number of hours a course may be repeated for credit.

**General information clause:** Cross-listed in Animal Science and Poultry Science (meaning this same course is also listed in these two academic areas).

Gives general information about the course.

**BER Courses:** Courses which may be used to meet the University's Basic Education Requirement (BER) are so designated throughout this bulletin. Not all BER courses are acceptable in all curricula. Students should consult their specific college or advisers before scheduling courses to be applied to this requirement.

**GEC Courses:** Courses which may be used to meet the University's new General Education Curriculum (GEC) are so distinguished throughout this Bulletin. Students should consult their specific college or adviser before scheduling courses to be applied to this requirement.

**FL, NS, SS, and VPA Admis Cond Courses:** Courses which may be used to fulfill admission conditions are so designated throughout this bulletin. For additional information, see pages 12-13.

#### D 444.01 Principles of Animal Nutrition I 444.02 Principles of Animal Nutrition II

**Decimal subdivisions:**

444.01 Principles of Animal Nutrition I

444.02 Principles of Animal Nutrition II

The decimal numbers are subdivisions of the generic number (444). These subdivisions may also carry the information described in A, B, and C. When registering for a course with decimals, the desired subdivision must be used rather than the generic number.

## University Classification and Course Numbering System (See Rule 3335-7-05)

Established 1967-68 (revised 1974-75), the system of numbering courses offered by the University is as follows:

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000-099 Non-credit courses (except certain seminars and colloquia) for orientation, remedial, or other noncollege-level experiences. These are courses with credit added to graduation requirements.

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100-199 Basic courses providing undergraduate credit, but not to be counted on a major or field of specialization in any department. Courses at this level are beginning courses, required or elective courses that may be prerequisite to other courses.

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200-299 Basic courses providing undergraduate credit and may be counted on a major or field of specialization.

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300-499 Intermediate courses providing undergraduate or basic professional credit that may be counted on a major or field of specialization.

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500-599 Intermediate courses providing undergraduate or professional credit that may be counted on a major or field of specialization, and may provide graduate credit only in other departments.

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600-699 Courses providing undergraduate or professional credit that may be counted on a major or field of specialization, and may provide graduate credit (in all departments).

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700-799 Advanced courses providing undergraduate, graduate, or professional credit.

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800-999 Courses providing graduate credit and are open to undergraduates only with the consent of the dean of the Graduate School.

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\* Courses for which graduate credit is anticipated must be taught by a member of the faculty approved by the graduate committee of the department offering the course. 800 and 900-level courses must be taught by members of the graduate faculty.

# Accounting and Management Information Systems

407 Hagerty Hall, 1775 College Road, 292-9368

## 201 Outline of Accounting U 5

Introduction to accounting in modern business; topics include financial statement development, interpretation, and analysis in various decision-making contexts.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit for 211 or equiv. Intended for students whose major is in fields other than business.

## 211 Introduction to Accounting U 5

Preparation and use of accounting reports for business entities; focus on uses of accounting for external reporting, emphasizing accounting as a provider of financial information.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H211 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: 211 or Econ 200 or equiv. Not open to students with credit for 201 or equiv. This course is available for EM credit.

## 212 Introduction to Accounting U 5

The uses of accounting reports in management decisions and in control of business operations; focus is on the internal use of accounting information.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H212 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: 211 or equiv; and Econ 200 or equiv. Not open to students with credit for 201 or equiv. This course is available for EM credit.

## 493 Individual Studies U 1-10

Individual study projects in selected areas in accounting and management information systems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

## 494 Group Studies U 1-10

Group study projects in selected areas in accounting and management information systems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

## H519 Honors Managerial Accounting U 5

Cost measurement and estimation in the context of product costing systems; performance evaluation systems, managerial decision problems, and the special problems of nonprofit entities.

Sp Qtr. 5 cl. Prereq: H212 or permission of instructor.

## H520 Honors Financial Accounting U 5

Principles and procedures of accounting for the assets, liabilities, and shareholder equity of an incorporated business.

Au Qtr. 5 cl. Prereq: H519. Not open to students with credit for 521, 522, or 523.

## 521 Financial Accounting I U G 3

Introduction to financial accounting theory and practice; determination of asset and liability valuation and income measurement and its relation to market frictions.

Su, Au, Sp Qtrs. 3 cl. Prereq: 212.

## 522 Financial Accounting II U G 3

Application of accounting techniques and theory to recording and reporting of financial data; emphasis on collection, summarization, and reporting of data in accordance with generally accepted accounting principles.

Su, Au, Wi Qtrs. 3 cl. Prereq: 521.

## 523 Financial Accounting III U G 3

Application of accounting theory in complex situations; emphasis on cash flows, leases, error corrections and shareholder's equity.

Wi, Sp Qtrs. 3 cl. Prereq: 522.

## 525 Cost Accounting U G 5

Managerial decision making in organizations with an emphasis on the use of financial data; theory and practice of management control.

Su, Au, Wi, Sp Qtrs. 5 cl. H525 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: 521; or 212 and Math 152.

## 531 Introduction to Accounting Information Systems U G 5

The design and control of computer-based accounting information processing systems.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H531 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 212 and Cptr/Inf 211. Not open to students with credit for 532.

## 532 Foundations of Business Information Systems U G 5

Technical foundation in computer based business information processing. Sp Qtrs. 2 2-hr cl. H532 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 212 and Cptr/Inf 212. Not open to students with credit for 531.

## 624 Advanced Accounting U G 4

Accounting for business enterprises emphasizing business combinations, consolidated financial reporting, foreign currency transactions and statement translation, and partnerships and governmental not-for-profit accounting.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H624 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: 523 or equiv.

## 626 Tax Accounting I U G 4

Fundamentals of federal, state, and local taxation, with major emphasis upon the federal income tax provisions having common application to all types of taxpayers.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H626 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: 521 or equiv.

## 627 Auditing Principles and Procedures U G 4

Basic concepts and standards of auditing; audit procedures and working papers; internal and external audit reports.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H627 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: 523 or equiv.

## H628 Accounting Research and Practice U G 4

Researching accounting concepts and standards underlying corporate and noncorporate financial statements including consideration of typical accounting problems.

Sp Qtr. 4 cl. Prereq: Sr standing and be enrolled in an Honors Program or permission of instructor.

## 636† Tax Accounting II U G 3

Advanced study of complex problem areas in taxation confronting the professional tax adviser, emphasizing the structure of tax provisions and opportunities for planning and control.

3 cl. Prereq: 522 and 626 or equiv.

## 646 Tax Research Seminar U G 3

Case studies requiring an in-depth examination of the tax aspects of situations frequently encountered by businesses and individuals.

3 cl. Prereq: 626 and permission of instructor.

## 651 Analysis and Design of Management Information Systems U G 4

Investigation and application, through real-world projects, of concepts and tools used in the analysis and design of management information systems.

Sp Qtr. 2 2-hr cl. Prereq: Cptr/Inf 516. Cptr/Inf 516 is a required course for a BSBA degree majoring in Information Systems.

## 653 Business Data Communications U G 4

Study of technological, economic, and organizational issues concerning computer based networks for business data communications.

Wi Qtr. 2 2-hr cl. Prereq: Jr or sr standing as Info Sys major in BUS.

## 655 Management of Office Information Systems U G 4

Surveys concepts and technologies for modeling, developing, and managing office information systems to enhance office efficiency and productivity.

Sp Qtr. 2 2-hr cl. Prereq: 531, 532, or Cptr/Inf 570.

## 657 Decision Support and Expert Systems U G 4

Study of computer-based systems designed to support decision-making within the organization.

Au Qtr. 2 2-hr cl. Prereq: Cptr/Inf 516 or permission of instructor.

## 659 Information Systems Planning and Management U G 4

Planning and management of the information system function in business organizations with emphasis on the problems involved.

Wi Qtr. 2 2-hr cl. Prereq: 211, 212; sr or grad status.

## 693 Individual Studies U G 1-10

Individual study projects in selected areas of accounting and management information systems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

## 694 Group Studies U G 1-10

Group study projects in selected areas of accounting and management information systems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**711 Financial Accounting U G 4**

A survey of the principles and methods by which financial information about an organization is collected and processed for external users; analyses and interpretation of financial data.

Su, Au, Sp Qtrs. 2 2-hr cl. Prereq: Grad standing or permission of Office of Graduate Business Programs. Not open to students in revised MBA Program.

**H783 Honors Research U 1-5**

Special topics research in accounting and/or management information systems; research evaluated through papers, thesis, and/or special examinations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 cumulative pt-hr ratio, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**811 Management Accounting G 3**

An examination of the use of accounting information in managing an organization; cost determination and analysis; economic decision-making business planning and control over operations and property.

2 1¼-hr cl. Prereq: 711 or equiv. Not open to grad students in accounting.

**823 Managerial Accounting for Decision Making G 4**

Cost systems with emphasis on the appropriate application of system outputs to management decisions.

Wi Qtr. 2 2-hr cl. Prereq: 811 or MBA 801 or permission of instructor.

**824 Corporate Financial Reporting G 4**

An examination of major aspects of corporate financial reporting by management under generally accepted accounting principles including coverage of disclosures required for traded securities, tax aspects of mergers and acquisitions, auditing of business financial reports, and impacts of financial reporting on managerial behavior, financial analysis, and auditing.

Au Qtr. 2 2-hr cl. Prereq: 811 or MBA 801 or permission of instructor.

**826 Tax Planning for Managerial Decision Making G 4**

Examination of the impact of taxes on several important business decisions; recognition of tax problems and planning opportunities.

2 2-hr cl. Prereq: 811 or MBA 801 or permission of instructor.

**827 Management Control Systems G 4**

Aspects of organizations impacting the design, implementation, and revision of management control systems for private and public enterprises including discussion of responsibility centers, transfer pricing, planning, budgetary reporting, incentive compensation, operational auditing, and the impact of taxation on decision-making.

Sp Qtr. 2 2-hr cl. Prereq: 811 or MBA 801 or permission of instructor.

**834 Corporate Information Systems Management G 4**

Case studies of the impacts of information technology on business organizations and its effective planning and control.

Au Qtr. 2 2-hr cl. Prereq: MBA 831 or permission of instructor.

**835 Systems Analysis and Design for Managers G 4**

Practical experience in software development for managers of business systems.

Wi Qtr. 2 2-hr cl. Prereq: MBA 831.

**844† Financial Accounting Theory G 3**

Intensive study of theories of income measurement and asset valuation.

Au Qtr. 2 1½-hr cl. Prereq: 524 or written permission of instructor.

**845 Controllership G 3**

The accounting executive's role in the management of an enterprise; accounting data for planning, coordination, control, and protection.

Sp Qtr. 3 cl. Prereq: 811 or written permission of instructor.

**852 Governmental and Non-Profit Accounting G 3**

The application of accounting principles to governments and other not-for-profit entities; problems relating to funds, appropriations, and budgetary controls.

Au, Sp Qtr. 3 cl. Prereq: 711 or equiv or permission of instructor. Cross-listed in Public Policy and Management.

**861 Seminar in Accounting G 3**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs.

**893 Individual Studies G 1-6**

Individual study projects in related areas in Accounting and Information Systems.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Open only to graduate students. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-5**

Group study projects in selected areas of accounting and management information systems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

**998 Research in Accounting: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Accounting: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Aeronautical and Astronautical Engineering

328 Harold A. Bolz Hall, 2036 Neil Avenue Mall, 292-2691

**200 Elements of Aeronautics and Astronautics U 4**

An introduction to the aerodynamics, propulsion, structural design, stability, and control of flight vehicles; emphasis on the mechanics of fluids.

Au Qtr. 3 cl, 1 2-hr lab. Prereq or concur: Math 152, Physics 131, and a minimum cumulative pt-hr ratio of 2.00. This course is available for EM credit.

**201 Elements of Aeronautics and Astronautics U 4**

A continuation of 200 with emphasis on aircraft propulsion and flight performance.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 200 and a minimum cumulative pt-hr ratio of 2.00. This course is available for EM credit.

**202 Elements of Aeronautics and Astronautics U 4**

Introduction to astronautics.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 201 and a minimum cumulative pt-hr ratio of 2.00. This course is available for EM credit.

**416 Design of Flight Vehicles U 3**

Continued design work on vehicle developed in 515.

Sp Qtr. 3 2-hr labs. Prereq: 515.

**505 Thermodynamics U G 4**

Introduction to the properties and behavior of aerodynamic fluids from microscopic and macroscopic points of view.

Au Qtr. 4 cl. Prereq: 201, Math 415, and En Graph 167 or equiv.

**510 Aerospace Laboratory U 2**

Laboratory demonstrations and experiments in aerodynamics, aeroelasticity, propulsion, and structures of flight vehicles.

1 4-hr lab. Open only to Aero Eng majors.

**510.01 Aerospace Laboratory I**

Laboratory demonstrations and experiments in aeronautics and astronautics.

Au Qtrs. Prereq: 520, 560, concur: 561 or 626.

**510.02 Aerospace Laboratory II**

Laboratory demonstrations and experiments in propulsion and gas dynamics.

Wi Qtrs. Prereq: 530, 550, concur: 561.

**510.03 Aerospace Laboratory III**

Laboratory demonstrations and experiments in structures, dynamics, and control.

Sp Qtrs. Prereq: 545, 620; prereq or concur: 544.

**515 Preliminary Design of Flight Vehicles U 4**

Wi Qtr. 2 cl, 2 3-hr labs. Prereq: 520, 550, and 560.

**520 Flight Vehicle Dynamics U G 4**

Introduction to the concept of dynamic stability and to the dynamics of rigid aircraft and satellite vehicles.

Sp Qtr. 4 cl. Prereq: 202, 580, and Eng Mech 430.

**530 One-Dimensional Gasdynamics U G 4**

One dimensional compressible flow including chemical reactions.

Wi Qtr. 4 cl. Prereq: 505.

**542 Flight Vehicle Structures I U G 4**

Load distributions, temperature distributions, and allowable stresses for flight vehicle structures; derivations of basic equations for analysis of flight vehicle structural components.

Au Qtr. 4 cl. Prereq: 202, Eng Mech 220, and Math 415 and 568.

**543 Flight Vehicle Structures II U G 4**

Stress analysis of flight vehicle structures.

Wi Qtr. 4 cl. Prereq: 542 and concur: 580 and En Graph 167.

**544 Structural Design of Flight Vehicle Components U G 4**

Design of joints; tension, bending, shear, and compression members; diagonal tension field beams, box beams, and pressure structures.

Wi, Sp Qtrs. 2 cl, 2 3-hr labs. Prereq: 543, 545.



**545 Introduction to Structural Dynamics of Aerospace Vehicles U 4**

Shape dynamics of flexible aircraft components and flexible spacecraft; coupling between attitude and flexible dynamics; model methods, response studies, and computer implementation.

Au Qtr. Prereq: 520, 543, 560, 581; Math 513 Eng Mech 430.

**550 Principles of Flight Vehicle Propulsion U G 4**

Functional characteristics and performance of rocket, ramjet, turbojet, turbo propeller, pulse jet, and hybrid engines.

Sp Qtr. 4 cl. Prereq: 530.

**560 Classical Aerodynamics U G 4**

Fundamentals of steady incompressible, non-viscous aerodynamic flows with applications to airfoils and finite wings.

Sp Qtr. 4 cl. Prereq: 530.

**561 Compressible Aerodynamics U G 4**

The fundamentals of the aerodynamics of compressible fluids.

Au Qtr. 4 cl. Prereq: 530, 560, and 580.

**570 Viscous Flow and Heat Transfer U G 4**

Fundamentals of viscous flow, laminar and turbulent boundary layers, aerodynamic heating, effects of body forces and elements of radiative transfer.

Au Qtr. 4 cl. Prereq: 530.

**580 Analytical Methods in Aeronautical and Astronautical Engineering U G 4**

Application of selected topics in mathematics to analysis in the field of aeronautical and astronautical engineering.

Au Qtr. 4 cl. Prereq: 202 and Math 415 and 568.

**581 Numerical Methods in Aeronautical and Astronautical Engineering U 4**

Application of numerical methods to selected topics in the field.

Sp Qtr. 4 cl. Prereq: En Graph 167 and Math 415 and 568.

**612 Aircraft Flight Test Engineering U G 4**

A determination of the performance, stability, controllability, and handling qualities of general aviation aircraft through flight tests.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 520 and 560, or equivs with permission of instructor.

**615 Introduction to Computational Aerodynamics U G 4**

Introduction to computational methods used in aerodynamic flow problems; applications to airfoil analysis and design.

Wi Qtr. 4 cl. 1 2-hr lab. Prereq: 560, 581 and En Graph 167, or equivs.

**616 Advanced Aerospace Vehicle Design U G 3**

Configuration formulation, performance and analysis, propulsion system design and integration, material selection, structural efficiency, CAD/CAM, computer simulations.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 416, 515, or 515H, or permission of instructor. Continuation of 416/515. Repeatable to a maximum of 9 cr hrs.

**620 Aircraft and Spacecraft Automatic Control Systems I U G 4**

Control theory as applied to analysis and design of flight control systems; components of automatic flight control systems.

Wi Qtr. 4 cl. Prereq: 520, 540, and Elec Eng 300.

**621 Aircraft and Spacecraft Automatic Control Systems II U G 4**

Control theory as applied to analysis and design of control systems for complex flight structures; interaction between structural flexibility and control systems.

Sp Qtr. 4 cl. Prereq: 520 and 620.

**626 Orbital Mechanics U G 4**

Satellite orbit analysis and multi-staging of rockets.

Au Qtr. 4 cl. Prereq: 202, 520 or Eng Mech 430. Not open to students with credit for 725

**693 Individual Studies in Advanced Aeronautical and Astronautical Engineering U G 2-10**

Special studies in aeronautical and astronautical engineering in one or more areas, including aircraft structures, aerodynamics, propulsion, flutter and vibration, and stability and control.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies in Aeronautical and Astronautical Engineering U G 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs.

**720 Stability and Control of Flight Vehicles U G 4**

Modern methods of system response analysis, root-locus analysis, and Liapunov stability analysis.

Sp Qtr. 4 cl. Prereq: 520.

**626 Orbital Mechanics U G 4**

Satellite orbit analysis and multi-staging of rockets.

Au Qtr. 4 cl. Prereq: 202, 520 or Eng Mech 430. Not open to students with credit for 725

**745\* Aeroelasticity I U G 4**

Dynamic loads analysis of elastic flight vehicles subjected to unsteady airloads.

Wi Qtr. 4 cl. Prereq: 540 and 560.

**751\* Advanced Propulsion U G 4**

Characteristics and performance of air breathing flight vehicle power plants and their components (inlets, turbo-machinery, combustors, and expansion nozzles).

Wi Qtr. 4 cl. Prereq: 550.

**760 Advanced Compressible Flow U G 4**

Two-dimensional supersonic flow theories.

Sp Qtr. 4 cl. Prereq: 561 or equiv.

**761 Advanced Aerodynamics U G 4**

Predictions of pressure distributions, forces, and moments of lifting configurations.

Sp Qtr. 4 cl. Prereq: 760.

**771 Aerodynamics of Viscous Compressible Flows U G 4**

Analysis of laminar boundary layers in high speed flows. Introduction to interacting boundary-layer theory and triple-deck theory, three-dimensional boundary layers.

Wi Qtr. 4 cl. Prereq: 570.

**775\* Hypersonic Flows I U G 4**

Introduction to the analysis of inviscid hypersonic flow fields.

Au Qtr. 4 cl. Prereq: 561.

**800 Theory of Deformation and Flow G 3**

General treatment of the basic principles underlying the mechanics of deformable media from macroscopic point of view.

Au Qtr. 3 cl. Prereq: 540, 560, and 570 or equiv. Required of all first yr grad students.

**802 Analytical Methods in Engineering I G 4**

Advanced methods for solution of partial differential equations with applications to fluid dynamics and heat transfer; topics include Green's function, integral transforms and asymptotic solutions.

Wi Qtr. 4 cl. Prereq: 560 and 580; or equivs.

**803 Analytical Methods in Engineering II G 3**

Continuation of 802 with emphasis on the solution of singular perturbation problems.

Sp Qtr. 3 cl. Prereq: 802.

**805 Aerodynamics of Chemically Reacting Fluids G 3**

The aerodynamics of one-dimensional compressible flow with chemical reactions and wave propagation.

Au Qtr. 3 cl. Prereq: 505 or equiv.

**810 Flight Vehicle Performance Analysis G 3**

Analysis of flight vehicle performance in planetary atmospheres.

Au Qtr. 3 cl. Prereq: 550 and 761.

**820 Advanced Flight Vehicle Stability and Control G 3**

Advanced studies in stability of systems, non-linear systems, Liapunov method, dynamics in extra-terrestrial atmospheres, new control methods.

Wi Qtr. 3 cl. Prereq: 720.

**842\* Advanced Structures for Flight Vehicles G 3**

Advanced analysis and design of aircraft structures and/or structural components including thermal, inelastic, and buckling effects.

Sp Qtr. 3 cl. Prereq: 543.

**850 Non-Equilibrium Flow Dynamics G 3**

Relaxation, dissociation, waves (sound, shock) nozzle flow and design collisional energy transfer in gases.

Sp Qtr. 3 cl. Prereq: 530 or equiv.

**851 Advanced Propulsion Problems G 3**

Combustion instability, free radicals as energy source, space propulsion problems, noise of exhaust jets, energy conversion, solid propellants, heat transfer in rocket engines, and cascade theory.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 751. Repeatable to a maximum of 9 cr hrs.

**860\* Advanced Topics in Aerodynamics G 3**

Topics to include unsteady aerodynamics, transient wave phenomena, interactive and separated flow, transonic flows.

Au Qtr. 3 cl. Prereq: 760. Repeatable to a maximum of 6 cr hrs.

**861\* Advanced Boundary Layer and Heat Transfer Theory G 4**  
Advanced topics in the areas of boundary layer and heat transfer phenomena. Wi, Sp Qtrs. 4 cl. Prereq: 771 and 800; or permission of instructor. Repeatable to a maximum of 8 cr hrs.

**865\* Advanced Viscous Flow Theory G 3**  
Three-dimensional viscous flow at low and high Reynolds number; stability theory; statistical theories of turbulence. Wi Qtr. 3 cl. Prereq: 771 and 800.

**866\* Hydrodynamic Stability of Fluid Motions G 4**  
Instability of inviscid and viscous parallel flows; thermal and centrifugal instability boundary-layer transition; and concepts of linear, nonlinear, and secondary instability analysis. Sp Qtr. 4 cl. Prereq: 570, 800 or equiv, or permission of instructor. Not open to students with credit for Mech Eng 866. Cross-listed in Mechanical Engineering.

**868 Molecular Theory of Gas Flows G 3**  
Theory of gas flows from molecular points of view. Wi Qtr. 3 cl. Prereq: 505 and 800 or equiv.

**873\* Computational Fluid Dynamics G 4**  
Advanced numerical methods for solving Navier-Stokes equations as well as equations for inviscid and boundary layer flows. Bodonyi, Herbert, and Scott. Sp Qtr. 4 cl. Prereq: 615 or Mech Eng 707. Not open to students with credit for Mech Eng 811. Cross-listed with Mechanical Engineering 811.

**880 Seminar G 1**  
Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable to a maximum of 15 cr hrs. Required of all grad students in aero eng.

**889 Advanced Topics in Aeronautical and Astronautical Engineering G 2-5**  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs.

**894 Group Studies in Aeronautical and Astronautical Engineering G 1-15**  
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**999 Research in Aeronautical and Astronautical Engineering G Arr**  
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Agricultural Communication

208 Agricultural Administration Building, 2120 Fyffe Road, 292-0450

**200 Introduction to Agricultural Communication U 3**  
History and development of mass communication and its application in agriculture, with emphasis on career opportunities in agricultural communication. Paulson. Wi Qtr. 3 cl. Limited to freshmen, sophomores, and transfer students. Not open to students with credit for 190.

**300 Agricultural Communication Documents U 3**  
Methods for publishing and presenting agricultural information. Sp Qtr. 2 2-hr cl.

**367 Agricultural Issues in Contemporary American Society U 5**  
Development of skills in reading, writing, speaking, listening, and critical thinking; exploration of a variety of topics related to agriculture and American society. Walters. Su, Au, Wi, Sp Qtrs. 1 2-hr cl, 2 1/2-hr lab. Prereq: English 110 or 111 or equiv, soph standing; or permission of instructor. GEC/LAR course.

**390 Oral Expression in Agriculture U 4**  
Oral expression theory and practice in an agricultural environment. Rossetti. Su, Au, Wi, Sp Qtrs. 3 1-hr cl, 1 2-hr lab. Prereq: Second writing course. Not open to students with credit for Communic 505.

**400 Writing for the Agricultural Media U 3**  
Experience in writing, editing, design, photography, and other processes involved in the production of the *Agri-Naturalist*. Agunga. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Journal 202 and second writing course. GEC course.

**401 Advanced Agricultural Magazine Writing and Production U 3**  
Advanced written media management with emphasis on editing, production, and management of the *Agri-Naturalist*. Agunga. Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 400.

**489 Agricultural Communication Internship U 2-5**  
Coordinated and supervised experience in agricultural communications including reporting, writing, editing, photography, graphics, broadcasting, advertising, and public relations. Paulson. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Limited to majors in ag comm. Repeatable to a maximum of 9 cr hrs. A final written report and an evaluation from the supervisor must be submitted to the instructor. This course is graded S/U.

**510 Public Information in Agriculture Communication U 3**  
Public information case studies, plans, and practices as applied to agriculture. Sp Qtr. 3 cl. Prereq: Journal 431.

**590 Senior Seminar in Agricultural Communication U 5**  
Capstone course addressing issues of the contemporary world as related to modern agricultural communicators. Paulson. Wi Qtr. 5 1-hr cl. Prereq: Sr standing or completion of a minimum of 15 cr hrs toward the major, and second writing course. GEC course.

**593 Individual Studies U 1-5**  
Students plan, conduct, and report on a special problem in agricultural communications not included in regular course work. Agunga and Paulson. Au, Wi, Sp Qtrs. Arr. Prereq: 2.50 cum pt-hr ratio and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**H683 Honors Project U 1-10**  
Conducting and reporting the honors project. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, H599, 693, or H694. This course is graded S/U.

## Agricultural and Construction Systems Management

200 Agricultural Engineering Building, 590 Woody Hayes Drive, 292-6131

**110 Engineering in Agriculture U 5**  
Basic concepts of engineering and technology essential to the development and function of improved systems for fulfilling our food and agricultural environment needs. Holmes. Wi Qtr. 4 cl, 1 2-hr lab.

**232 Small Air-Cooled Engines U 4**  
Principles of operation, maintenance, and repair of small air-cooled engines. Gliem. Su, Au, Wi, Sp Qtrs. 2 cl, 2 2-hr labs.

**240 Fabrication of Metal in Agri-business and Agricultural Applications U 4**  
Principles and techniques in the fabrication of metal using welding and other processes needed in agricultural and agri-business applications. Papritan. Au, Wi, Sp Qtrs. 2 cl, 2 2-hr labs.

**241 Building Materials and Construction in Agriculture U 4**  
Principles and techniques in the fabrication of wood, concrete, and masonry materials used in agri-business and agricultural applications. Gliem. Su, Au, Wi, Sp Qtrs. 2 cl, 2 2-hr labs.

**293 Individual Studies U 1-5**  
Work on problems not in regular courses; practice in development, organization, solution, and reporting on such problems. Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**  
Basic studies in agricultural and construction systems management. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

**310 Electric Power for Agricultural and Residential Applications U 3**  
Principles and applications of systems and components essential for distribution and control of electricity for power, heat, and illumination in residences and agricultural structures. Carpenter. Wi Qtr. 2 cl, 1 2-hr lab. Prereq: Math 130 or 148; second writing course; Jr or sr standing; or permission of instructor. Not open to students with credit for Ag M&Sys 231.

**320 Facilities for Agricultural and Greenhouse Production U 5**

Buildings and equipment for livestock, crop, and greenhouse production; selection and specification of ventilation systems, waste management alternatives, and construction materials Gustafson.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Math 130 or 148, Physics 111. Not open to students with credit for Ag M&Sys 220.

**330 Material Handling and Processing U 3**

Principles and functional analysis of agricultural processing systems, with special emphasis on crop drying, handling, and storage. Keener.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: Math 130 or 148, Biology 113. Not open to students with credit for Ag M&Sys 221.

**360 Agricultural Machine Principles U 5**

Principles underlying selection and use of agricultural machines, including power and energy requirements, performance evaluation, calibration, adjustment, and hydraulics. Holmes

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: Math 130 or 148, and Physics 111.

**370 Principles of Hydrology U 3**

Principles of hydrology applied to agricultural and forest watersheds, including applications in drainage, erosion, irrigation, water supply, and water quality. Nokes.

Au, Sp Qtrs. 3 cl. Prereq: Math 130 or 148. Not open to students with credit for Ag M&Sys 570.

**371 Land Surveying for Agricultural Systems U 1**

Principles of land surveying applied to soil and water planning and rural building construction. Papritan.

Au, Sp Qtrs. 1 3-hr lab. Prereq: Math 130 or 148. Not open to students with credit for Ag M&Sys 270.

**489 Internship in Agricultural Mechanization and Systems U 2**

Ten weeks of planned and supervised experience in an approved business or industry providing professional experiences in agricultural mechanization and systems; written comprehensive report required. Gliem.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Dept major, permission of adviser and 12 cr hrs in dept. Repeatable to a maximum of 4 cr hrs.

**520 Planning Agricultural Facilities U G 3**

Application of strategic planning, engineering economics, and farmstead planning techniques to the specification of facilities for agricultural and greenhouse production. Stombaugh.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 320 and Ag Econ 200 or Econ 200. Not open to students with credit for Ag M&Sys 220.

**540 Construction Systems U G 3**

Principles of planning, interpreting, and estimating as applied to standard construction, including procurement, accounting, logistics, and personnel management. Gliem.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 241.

**560 Management of Agricultural Machinery Systems U G 3**

Selection and management of complex systems of machines using spreadsheets and computer models to develop and analyze alternatives. Holmes.

Wi Qtr. 3 cl. Prereq: 360.

**575 Soil and Water Systems U G 3**

Planning and managing drainage, irrigation, erosion prevention, and water storage systems. Elliot.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 370 and 371, or permission of instructor. Not open to students majoring in agricultural engineering or civil engineering.

**591 Workshop U G 1-5**

In-depth study of selected area of agricultural mechanization with emphasis on application of principles, objectives, methods, and equipment to organization, management, and teaching of agricultural mechanics. Gliem.

Su, Au, Wi, Sp Qtrs. Prereq: Teaching or extension experience or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**600 Agricultural Safety and Health U G 2**

Contemporary issues in agricultural safety and health; strategies and methods for the management of safety and health programs. Bean.

Wi Qtr. 2 cl, 1 1-hr lab. Prereq: Limited to jr and sr students with prereqs of English 110, second writing course, and an oral expression course; or permission of instructor.

**605 Professional Development U 1**

Developing and pursuing career plans; strategies and programs for employment, professional development, personal growth, and relationships. Gustafson.

Au Qtr. 1 cl. Prereq: Sr standing in agriculture.

**H683 Honors Project U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr 590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

**693 Individual Studies U G 1-5**

Problems not included in regular courses; practice in development, organization, solution, and reporting on such problems.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Advanced studies in construction or agricultural systems management.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**Agricultural Economics**

103 Agricultural Administration Building, 2120 Fyffe Road, 292-7911

**150 Micro-Computer Methods for Agricultural Decisions U 2**

Introduction to micro-computer application programs and their uses. Jones.

Au, Wi, Sp Qtrs. 1 1-hr cl, 1 2-hr lab. Prereq: Math 116 or equiv. Not open to students with credit for 250. This course is available for EM credit.

**200 Principles of Food and Resource Economics U 5**

Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use. Adams, Forster, Jones, Himes, and Wessel.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Math 130 or equiv. Not open to students with credit for 100, H199, H200, or Econ 200. This course available for EM credit. BER/GEC/LAR course. SS Admis Cond course.

**H200 Principles of Food and Resource Economics U 5**

Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use. Adams.

Wi Qtr. 5 cl. Prereq: Math 131 or permission of instructor. Not open to students with credit for 100, H199, H200, or Econ 200. BER/GEC/LAR course. SS Admis Cond course.

**205 Data Analysis for Agribusiness and Applied Economics U 5**

Introductory course in data analysis, stressing computer applications of probability and statistics, problems of data gathering, presentation, and interpretation in economics and business. Sporleder, Miranda, Jones, Irwin.

Su, Au, Wi, Sp Qtrs. 3 1-hr cl, 1 96-min lab. Prereq: Math 130. Not open to students with credit for Agr Educ 387, Agronomy 210, Animl Sc 210, Stat 125, 135, or 145. GEC course.

**247 Career Assessment and Opportunities in Agribusiness and Applied Economics U 1**

Identification of personal strengths and professional goals; exploration of career opportunities in agribusiness and applied economics; discussion of skills and courses necessary for specific career paths. Zulauf.

Wi Qtr. 1 1-hr cl. Prereq: Soph standing.

**401 Principles of Agribusiness Management U 4**

Introduction to agribusiness management principles and skills in the context of the four functions of management: planning, organizing, directing, and controlling. Batte, Erven, Forster, and Rhodus.

Au, Wi, Sp Qtrs. 4 cl. Prereq: 200 or H200 or Econ 200 or H200. Not open to students with credit for 310.01 or 310.02.

**402 Principles of Agribusiness Marketing U 4**

Study of specific problems of marketing food and fiber products with emphasis on structures and institutions facing agribusinesses in domestic and international markets. Larson, and Stout.

Au, Wi, Sp Qtrs. 4 cl. Prereq: 200, H200, Econ 200, or H200. Not open to students with credit for 320.

**403 Principles of Agribusiness Finance U 4**

Financial management of farms and agribusinesses; capital budgeting, capital structure, portfolio analysis, futures and options markets, financial institutions. Forster and Meyer.

Wi, Sp Qtrs. 5 cl. Prereq: 200 or equiv and Acct&MIS 212 or equiv. Not open to students with credit for 416.

**412 Farm Records and Analysis U 5**

Nature and need for farm business records and analysis and interpretation of essential records from farm manager viewpoint; their use in income tax reporting. Duvick.

Au, Sp Qtrs. 2 2-hr cl, 1 2-hr lab. Prereq: 401 and Acct & MIS 211 or equiv.

**426 Marketing Dairy Products U 3**

A study of the principles of assembling, transporting, selling, pricing, distribution, marketing costs, and margin for dairy products. Thraen.

Au Qtr. 3 cl. Prereq: 100 or 200. Offered in cooperation with Dairy Science.

## 22 Agricultural Economics

### 489 Internship in Agricultural Economics U 3

Supervised experience with an approved firm or organization; pre-approved outline, oral presentation, and written comprehensive report required.

Su, Au, Wi, Sp Qtrs. Prereq: 401 or 402 or 403, or Econ 501, and written permission of major adviser. Open only to dept majors. This course is graded S/U.

### 501 Price Analysis U 3

Forces that influence the behavior of agricultural prices; analytical techniques useful in predicting price changes or the consequences of price changes are introduced. Irwin.

Au, Wi Qtrs. 2 1-hr cl, 1 2-hr lab. Prereq: Econ 501, Math 131, and one of the following: 205 or Stat 145, Agr Educ 387, Agronomy 210, Animl Sc 210. Not open to students with credit for 420.

### 502 Production Decision Analysis U 3

Evaluation of production and financial decision through experiments with economic models, with emphasis on computerized solutions using linear programming and simulation techniques. Batte.

Wi, Sp Qtrs. 3 1-hr cl and 1 hr lab. Prereq: 150 or basic spreadsheet competency, 401, Econ 501, and one of the following: 205, Agr Educ 387, Agronomy 210, Animl Sc 210, or Stat 145. Not open to students with credit for 450.

### 503 Economics of Public Policy Analysis U 3

Understanding of economic tools for analyzing public policy, including welfare economics and cost-benefit analysis, and their application to policy issues in agriculture. Zulauf.

Au, Sp Qtrs. 3 cl. Prereq: Econ 501.

### 510 Farm Business Management U 3

Analysis of resource control and business organization decisions that are unique to farm firms. Forster.

Wi Qtr. 3 cl. Prereq: 401.

### 521 Salesmanship in Agriculture U 3

Principles and techniques of selling to agribusiness buyers. Himes.

Au Qtr. 3 cl, 1-hr lab/discussion. Prereq: 402.

### 522 Economics of the Livestock-Meat Industry U G 3

Principles and practices involved in marketing livestock and meat; institutions and agencies concerned in pricing and product flows; industry organization and performance, public regulation; future trends. Stout.

Wi Qtr. 3 cl. Prereq: 320. Offered in cooperation with Animal Science.

### 523 Grain Marketing U G 3

Principles and practices involved in grain and feed marketing and the theory of grain pricing; economics of grain marketing. Larson.

Au Qtr. 3 cl.

### 528 Marketing Fruits and Vegetables U G 3

Principles involved in the marketing of fresh and processed fruits and vegetables and the institutions and agencies concerned in pricing and product flows from producer to consumer. Jones.

Sp Qtr. 3 cl, 1 2-day field trip.

### 531 Environmental and Natural Resources Economics U G 5

Economic analysis of private and public decisions regarding interactions with the natural environment. Randall and Southgate.

Au, Sp Qtrs. 5 cl. Not open to students with credit for Nat Res 531. Cross-listed in Natural Resources.

### 534 Food and Fiber Economics U G 3

Economic factors affecting domestic and international specialization in food and fiber production and consumption and consequent interregional trade patterns.

Sp Qtr. 3 cl.

### 541 Agricultural Cooperatives U G 3

Basic principles of cooperatives including types of organizations, legal aspects, membership relations, financing, organizational and intercooperative problems, and distribution of savings. Hahn and Sporleder.

Au, Sp Qtrs. 3 cl. Prereq: 401 or 402.

### 553 Economic Analysis of Consumption, Food and Nutrition U G 4

Applications of economic and statistical tools to analyze consumption behavior, demand for food and nutrition, food safety, market structure, and fast food industry. Chern.

Au Qtr. 1 3-hr cl and 1 2-hr lab. Prereq: Econ 501 and one of the following: Ag Econ 205, Agr Educ 387, Agronomy 210, Animl Sc 210, Stat 135 or 145, or permission of instructor.

### 560 Human Resource Management in Small Businesses U G 3

Human resource planning, job analysis, organizational structure, recruitment and selection, training, motivation, leadership, communication, compensation, and evaluating employee performance in context of small businesses. Erven.

SpQtr. 2 1½-hr cl. Prereq: 401 or Bus-MHR 500.

### 591 Workshop U G 3

Study of selected current topics in agricultural economics for teachers of vocational agriculture and extension agents.

Su Qtr. 4 2-hr cl. At least 5 cr hrs of previous course work in agr econ or the equiv. Repeatable to a maximum of 12 cr hrs; decimal subdivisions not repeatable.

#### 591.01 Agricultural Business Management

#### 591.02 Agricultural Marketing

#### 591.03 Financial Management in Agriculture

### 595 Seminar in Agricultural Economics U 1

Analysis of social and economic problems encountered by college graduates in a dynamic world.

Wi Qtr. 1 2-hr cl. Prereq: Sr standing.

### 597 Issues of the Contemporary World U 5

Prereq: Sr standing. GEC/LAR course.

#### 597.01 Problems and Policies in World Population, Food, and Environment

Problems related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these problems, especially in low-income countries. Hitzhusen, Graham and Southgate.

Au, Wi, Sp Qtrs. 2 1½-hr cl, 1 2-hr rec. Not open to students with credit for Int Stds 597.01. Cross-listed in International Studies.

### 602 Contemporary Issues in Domestic and International Agriculture U 5

Uses of economic concepts to derive and evaluate policy alternatives for current domestic and international issues related to agribusiness and applied economics.

Wi Qtr. 3 1½-hr cl. Prereq: 401, 402, 403, 501, 502, and 503; and a second writing course. Not open to students with credit for 530 or H530 or H602. H602 may be available to students enrolled in an honors program or by written permission of dept. GEC course.

### 610 Strategic Planning for the Farm Business U G 3

Detailed application of production economics, management principles, and decision making techniques to the organization, operation, and administration of farms; farm plans developed. Batte and Lines.

Sp Qtr. 3 cl and field trips during qtr. Prereq: 401, Acct&MIS 201 or 211.

### 620 Agri-Industry Organization and Public Policy U G 4

Structure, conduct, performance, and public policy in agricultural industries; extensive use of analytical evidence focused on co-ops, and food manufacturing, wholesaling, and retailing. Stout.

Sp Qtr. 2 2-hr cl. Prereq: 402 and 20 additional cr hrs in the social sciences.

### 622 Applied Agricultural Price Analysis U G 3

Regression, correlation, and time series applied to analysis of agricultural commodity prices. Thraen.

Wi Qtr. 3 cl. Prereq: 420 and Stat 133.

### 625 Commodity Futures and Options Markets U G 5

Addresses the economic function and price formation of commodity futures and options markets. Irwin and Zulauf.

Au Qtr. 5 cl. 403 or Bus-Fin 620, sr standing or above.

### 631 Benefit-Cost Analysis U G 5

Development and illustration of key benefit-cost concepts and estimation techniques through applications to agricultural, infrastructure, natural resource, and environment projects. Hitzhusen.

Au Qtr. 2 2-hr cl, 1 1-hr cl. Prereq: 531 or minimum of 10 hrs of economic principles or permission of instructor.

### 632 Agricultural Development: Theory and Empirical Evidence U G 4

Analysis of the agricultural and economic development process of developing countries; evaluation of theory and empirical evidence regarding the development process. Meyer.

Wi Qtr. 2 2-hr cl. Prereq: 401, 402, or 403; or grad standing or permission of instructor. Not open to students with credit for 532.

### 640 Strategy in Agribusiness U G 5

Analysis of important management problems confronting agricultural marketing and farm supply firms, including interpreting and responding to industry and socio-economic trends and change forces. Hahn and Sporleder.

Au Qtr. 2 2-hr cl. Prereq: 320 and 416 or equiv, and 450.

### 670 Agricultural Law U G 3

Legal concerns of owning and/or managing farm and agri-business firms as related to property ownership, finance, business organization, labor, insurance, family, and estate planning.

Sp Qtr. 3 cl. Prereq: 412 or equiv and 416 and Bus-Fin 510 or permission of instructor.

**H683 Honors Project U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr 590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

**693 Individual Studies U G 1-3**

Planning, conducting, and reporting a special problem in agricultural economics.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio, 401 or 402 or 403, or Econ 501 and written permission of instructor. Repeatable to a maximum of 6 cr hrs in any or a combination of decimal subdivisions. These courses are graded S/U.

693.01 Agribusiness Management and Finance

693.02 Agricultural Marketing and Policy

693.03 Foreign Agricultural Development

693.04 Quantitative Methods in Agricultural Economics

693.05 Resource Economics

693.06 General Agricultural Economics

693.07 Consumption and Demand

**694 Group Studies U G 2-5**

Selected topics in agricultural economics to acquaint students with current economic conditions.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 credit hours.

694.01 Agricultural Management and Finance

694.02 Agricultural Marketing and Policy

694.03 Foreign Agricultural Development

694.04 Quantitative Methods in Agricultural Economics

694.05 Resource Economics

694.06 General Agricultural Economics

694.07 Consumption and Demand

**695 Farm and Agribusiness Management Seminar U G 2**

Topics in farm and agribusiness management selected to reflect emerging problem areas and opportunities for application of analytical tools developed in previous courses. Batte and Forster.

Wi Qtr. 1 2-hr cl. Prereq: 610 or 640 or 670 or permission of instructor. Repeatable to a maximum of 4 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 25 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**702 Linear Economic Models U G 4**

Linear and integer programming methods and their applications to problems in agricultural, resource, and environmental economics. Miranda.

Au Qtr. 4 cl. Prereq: Math 130 and Econ 501. Not open to students with credit for Math 634.

**703 Economics of Consumption U G 4**

Applications of economic theory to consumption analysis, new models of consumer choices, empirical studies of demand/consumption, and consumer issues in the market place. Chern.

Au Qtr. 2 2-hr cl. Prereq: Econ 501 or equiv.

**705 Economics of Agricultural Production U G 4**

A critical consideration of economic principles as they apply to production problems in agriculture. Forster.

Wi Qtr. 2 2-hr cl. Prereq: Economics 501 or equiv. Not open to students with credit for 805.

**716 Advanced Agricultural Finance U G 4**

Examination of theoretical and empirical models of agricultural finance with emphasis on firm financial decision analysis, supply of and demand for rural financial services. Batte and Schnitkey.

Sp Qtr. 2 2-hr cl. Prereq: 416 or Bus-Fin 620.

**734 Agricultural Trade Policy U G 4**

Institutions, policies, and economic theory of global agricultural trade; agricultural trade in international context of commodity program and macroeconomic policies. Tweeken.

Su Qtr. 2 2-hr cl. Prereq: Econ 501 and 502 or equiv.

**800 Research Methods in Agricultural Economics G 3**

Principles of scientific method in agricultural economics. Randall.

Sp Qtr. 2 1½-hr cl. Prereq: 703 or 705 or Econ 804 or permission of instructor.

**801 Applied Methods in Agricultural Economics Modeling G 4**

Application of statistics to problems in agricultural economics. Thraen.

Au Qtr. 2 2-hr cl. Prereq: Econ 741.

**802 Quantitative Methods in Agricultural Economics G 4**

Applications of analytical models to problems in agricultural economics research. Miranda.

Au Qtr. 2 2-hr cl. Prereq: 702, 800, and Econ 741..

**803 Applied Demand Analysis: Food and Agricultural Markets G 4**

Application of demand and consumption theory to the estimation of demand relationships and demand systems in agricultural and natural resource markets. Chern.

Wi Qtr. 2 2-hr cl. Prereq: 801 and Econ 808.

**806 Economics of Agricultural Production G 4**

A further consideration of economic principles as they apply to production problems in agriculture. Schnitkey.

Wi Qtr. 2 2-hr cl. Prereq: 705 and Econ 808.

**807 Project Evaluation for Public Choice G 5**

The theory of public choice, cost-benefit analysis, and income distribution assessment applied to evaluation of public investment in agricultural, natural resource and rural development projects. Hitzhusen.

Su Qtr. 3 1½-hr cl. Prereq: 703 or Econ 501A.

**809 Applied Welfare Economics and Policy Analysis G 4**

Application of welfare economic theory and methods of problems of agriculture and natural resources. Randall.

Sp Qtr. 2 2-hr cl. Prereq: 803, 806, and Econ 808.

**810 Agricultural Firm Management G 3**

Examination of the operating and strategy problems confronting the managers of farm and nonfarm agribusiness firms, with emphasis on applying and integrating management concepts. Erven.

Au Qtr. 2 1½-hr cl. Prereq: Econ 501 or 501A or permission of instructor.

**820 Marketing Economics in Agriculture G 3**

A critical study of contemporary problems in agricultural marketing in the U.S. and world economics with emphasis on the theoretical and policy implications. Jones.

Au Qtr. 3 cl. Prereq: 703 or Econ 501A or permission of instructor.

**830 Agricultural Policy G 4**

Examination of values of American society concerning agriculture, reasons for these values, and alternatives for achieving various goals for U.S. agriculture. Tweeken.

Su Qtr. 4 cl. Prereq: 320 or 420; 530 and Econ 805 and 806.

**831 Resource Economics G 3**

Application of economic theory and decision-making frameworks to current issues of resource use, allocation, and control. Randall.

Wi Qtr. 3 cl. Prereq: Econ 501A or permission of instructor.

**832 Seminar in Economic Development of Foreign Agriculture G 3**

Characteristic problems of developing countries, identification and analysis of limiting factors in underdevelopment, and techniques for stimulating economic development through growth in agriculture. Graham.

Sp Qtr. Prereq: Econ 501 or 501A or permission of instructor. Repeatable to a maximum of 8 cr hrs.

**934 Advanced International Trade in Food and Agriculture G 4**

Synthesis of trade theory with industrial organization analysis and applications to the food and agricultural sector. Sheldon.

Au. Qtr. 2 2-hr cl. Prereq: Econ 808 or 861 or permission of instructor

**993 Individual Studies G 2-5**

Planning, conducting, and reporting a special problem in agricultural economics fitting the needs of the student, under the guidance of an instructor.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs in any or a combination of decimal subdivisions. These courses are graded S/U.

993.01 Agricultural Management and Finance

993.02 Agricultural Marketing and Policy

993.03 Foreign Agricultural Development

993.04 Quantitative Methods in Agricultural Economics

993.05 Resource Economics

993.06 General Agricultural Economics

993.07 Consumption and Demand

**995 Seminar G 2-4**

Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

**999 Research in Agricultural Economics G Arr**

Research for thesis or dissertation purposes only.  
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**Agricultural Education**

208 Agricultural Administration Building, 2120 Fyffe Road,  
292-6321

**100 Vocational and Extension Education in Agriculture U 1**

Importance and purpose of agricultural education with emphasis on vocational programs, program component functions, and the professional roles of personnel. Cano.

Au, Wi, Sp Qtrs. 1 cl. This course is available for EM credit.

**280 Experience in Agricultural Education U 1-5**

Su, Au, Wi, Sp Qtrs. Not open to students with credit for 380. Repeatable to a maximum of 15 cr hrs. These courses are graded S/U. Supervised field experience in:

**280.01 Teaching Agriculture in the Public Schools**

Participation in professional activities relating to programs and methods in teaching vocational agriculture. Budke.

Application is required one qtr prior to enrollment. Supervised field experience. This course is graded S/U.

**280.02 Cooperative Extension**

Participation in professional experiences involving cooperative extension programs. Conklin.

Prereq: Written permission of coordinator of field experience.

**280.03 Other Agricultural Education Programs**

Participation in programmed experience in agricultural education other than teaching vocational agriculture and cooperative extension. Budke.

**280.04 Agricultural Occupations**

Participation in agricultural employment experiences. Budke.

Open only to dept majors. Repeatable to a maximum of 10 cr hrs.

**290 Communication of Agricultural Concepts U 3**

Procedures and practice in developing, interpreting, and communicating agricultural and natural resources concepts with emphasis upon the use of visual materials and effective presentation. Paulson.

Au, Wi, Sp Qtrs.: 2 1/2-hr cl. Prereq: English 110.

**294 Group Studies U 1-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**340 Introduction to Teaching Agriculture U 3**

Development of a basic understanding of teaching and learning in a variety of formal and informal settings, with on-site visits to educational settings. Rossetti.

Wi Qtr. 1 2-hr cl; 2 hrs lab/field experience time. Prereq: 280.01 or 280.02 or 280.03 and Psych 100.

**342 Leadership Development in Agriculture U 3**

Designed to develop an understanding of leadership with particular emphasis on theory and practice relative to effective functioning as leaders in an agricultural or agriculturally related setting. Safrit.

Sp Qtr. 3 cl.

**387 Data Analysis in Applied Sciences U 5**

Application and interpretation of descriptive and inferential statistics in applied sciences associated with agriculture.

Au, Wi, Sp Qtrs. 22-hr cl, 1 2-hr lab. Prereq: Math 116, 130, or 148; and basic knowledge of microcomputer use. Not open to students with credit for Agr Econ 205; Agronomy 210; Animl Sc 210; or Stat 125, 135, or 145. GEC course.

**420 Program Development in Cooperative Extension U 5**

Developing Extension programs in agriculture, home economics, 4-H/youth development, and international settings.

Au Qtr. 5 cl. Prereq: 280.02 and 340.

**530 Methods of Teaching Agriculture U 3**

Examining the learning process with emphasis on planning for instruction, and the use of appropriate methods for teaching in agriculture. Cano.

Sp Qtr. 2 cl, 2 lab. Prereq: 340, Psych 230, Educ 600, and permission of instructor.

**560 Field Experience in the Cooperative Extension Service U 12**

Supervised participation in professional activities of cooperative extension personnel including clinical analysis in seminars. Conklin.

Su, Au, Wi, Sp Qtrs. 8 hrs/day for 10 wks. Prereq: 530.

**570 Field Experience in Agricultural Industry U 12**

Experience in educational programming in an agriculture-related business or industry. Budke.

Su, Au, Wi, Sp Qtrs. Field experience, 10 weeks. Prereq: 530.

**575 Teaching Vocational Agriculture**

Development of basic cognitive and performance skills required to earn a one-year certificate to teach vocational agriculture.

Su Qtr. Prereq: Eligibility to apply for a vocational agriculture teaching certificate. Repeatable to a maximum of 12 cr hrs; decimal subdivisions not repeatable. Cross-listed with Educational Studies and Home Economics Education. These courses are graded S/U.

**575.01 Pre-Service Program U 8**

Orientation to vocational agriculture with emphasis upon purposes and content of such programs in teaching high school and adult students.

8 hrs per day, 20 days.

**575.05 Follow-Up Program U 4**

Orientation to vocational agriculture with emphasis upon purposes and content of such programs in teaching high school and adult students.

8 hrs per day, 10 days. Prereq: 575.01.

**580 Student Teaching in Agriculture U 12**

Supervised participation in teaching and other professional responsibilities of teachers of agriculture including clinical analysis in conferences and seminars. Henderson.

Au Qtr. 10 wks. Prereq: 530. Application required 2 qtrs prior to enrollment.

**585 Instructional Program Planning for Vocational Agriculture U 5**

Principles and procedures used in planning and conducting programs of vocational agriculture. Henderson.

Au Qtr. 5 cl. Prereq: 530.

**594 Group Studies U 3**

Group studies for students in specialized programs.

Su Qtr. Arr. Repeatable to a maximum of 15 cr hrs.

**600 Contemporary World Issues in Agricultural Education U 5**

Debate, consideration, and integration of agricultural education from a wider agricultural perspective; including international awareness, problem solving, and ethical decision-making. Henderson.

Wi Qtr. 5 cl. Prereq: 530. GEC course.

**621 Curriculum Development U G 3**

Principles and practices used in developing courses of study in agriculture for high school and post-high school programs. Henderson.

Su Qtr. 3 2-hr cl.

**622 Continuing Education in Agriculture U G 3**

Principles and practices involved in developing vocational, technical, and extension programs for out-of-school youth and adults.

Sp Qtr. 1 2 1/2-hr cl.

**631 Methods in Teaching Agriculture U G 3**

Theory, principles, and procedures associated with effective instruction in agriculture at the secondary, technical, and college levels. Cano and Norland.

Su (1st term), Wi Qtrs. 1 2 1/2-hr cl.

**640 Instructional Media in Teaching Agriculture U G 3**

Theory and practice in developing and using instructional media and equipment at the secondary, technical, and college levels. Budke.

Wi Qtr. 1 2 1/2-hr cl.

**641 Occupational Experience in Agricultural Education U G 3**

Principles and procedures used in selecting, planning, conducting, and evaluating occupational experience programs for students. Budke.

Su Qtr. 1 2 1/2-hr cl.

**642 Youth Organizations U G 3**

An analysis of youth organizations in vocational and extension education with emphasis on planning and conducting such programs. Cano and Clark.

Su, Sp Qtrs. 1 2 1/2-hr cl.

**643 Youth Program Management in Non-School Settings U G 3**

Principles, theories, and practices involved in conducting, supervising, and managing a youth program. Clark.

Wi Qtr. 3 cl.

**H683 Honors Projects U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

**684 Internship in Agricultural Education U G 1-15**

Guided participation to further enhance professional and/or technical competency in selected areas.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. These courses are graded S/U.



**684.10 Internship in Agricultural Education: Teaching Agriculture in Public Schools**

Prereq: 580

**684.20 Cooperative Extension Education**

Prereq: 530.

**684.30 Technical**

Prereq: 580.

**684.40 Specialized Agriculture****693 Individual Studies U G 1-5**

Planning, conducting, and reporting a special study appropriate to the needs of the student.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 25 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**770 Evaluation U G 3**

Evaluation principles and procedures used in developing vocational, technical, and extension programs. McCaslin.

Sp Qtr. 2 1½-hr cl.

**790 Workshop in Agricultural Education U G 1-5**

Intensive study of selected areas of agricultural education with emphasis on the application of principles and methods in attaining desired objectives.

Su, Au, Wi, Sp Qtrs. Minimum of 3 wks. Prereq: Teaching or extension experience. Repeatable to a maximum of 24 cr hrs.

**795 Seminar U G 1-3**

1- or 2-hr cl. Prereq: Written permission of instructor. A maximum of 15 cr hrs may be earned with not more than 6 hours in any one decimal subdivision.

**795.01 Contemporary Problems**

Au, Wi, Sp Qtrs. This course is graded S/U.

**795.02 Problems and Issues**

Wi, Sp Qtrs.

**795.03 Leadership Development**

Au, Sp Qtrs.

**795.04 Program Development**

Au Qtr.

**795.05 Research and Evaluation**

Au Qtr. 2 hr cl. This course is graded S/U.

**795.06 Communication**

Au, Sp Qtrs.

**810 Principles of Vocational-Technical Education G 3**

An analysis of evolving concepts of vocational and technical education with emphasis upon principles underlying organizations and practice. Budke.

Wi Qtr. 1 3-hr cl.

**811 Administration and Supervision G 3**

Principles in developing and administering programs in extension education with attention to federal-state-local relationships, in-service education, and supervisory procedures.

Wi Qtr. 1 2½-hr cl.

**812 Teacher Education G 3**

Principles and methods of teacher education in agriculture including selection and guidance of students, curriculum, field experience, placement, in-service education, and research. Barrick.

Au Qtr. 1 2½-hr cl.

**821 Administrative Practices in Vocational Education G 3**

A study of the concepts of vocational education program administration, including management skills, policy development, staff management, finance, and program evaluation.

Su, Sp Qtrs. 1 2½-hr cl. Not open to students with credit for 811 or Ed-Votec 821. Cross-listed in Education: Vocational-Technical.

**823 Program Planning and Development G 3**

Principles, theory, and practice in developing state and local programs of extension education. Conklin.

Au Qtr. 1 2½-hr cl.

**830 Supervision of Instruction in Vocational Education G 3**

A study of the concepts of vocational education supervision including leadership styles, improving instruction, and program and personal evaluation. Barrick.

Su, Wi Qtrs. 1 2½-hr cl. Not open to students with credit for Ed-Votec 830. Cross-listed in Education: Vocational-Technical.

**833 Vocational Education Program Planning G 3**

A study of the planning, development, management, and evaluation of instructional systems and vocational education programs. McCaslin.

Sp Qtr. 1 2½-hr cl. Not open to students with credit for 823 or Ed-Votec 833. Cross-listed in Education: Vocational-Technical.

**885 Research Methods G 3**

Principles and techniques of research appropriate for planning, conducting, and reporting research in vocational, technical, and extension education. L. Miller.

Su (1st term), 5 cl; Au, Wi, Sp Qtrs, 1 3-hr cl.

**886 Research Design G 3**

Development of effective design for research problems in vocational, technical, and extension education, including theory, models, and sampling. McCracken.

Au, Wi, Sp Qtrs. 2 1½-hr cl. Prereq: 885 or equiv.

**887 Analysis and Interpretation of Data G 3**

Application and interpretation of descriptive and inferential statistics for research in vocational-technical and extension education, including the use of the computer. Warmbrod.

Au, Sp Qtrs. 1 2½-hr cl. Prereq: 886 or equiv.

**888 Instrumentation and Procedures for Data Collection G 3**

Selection, development, and analysis of various types of instruments and procedures for collecting research data. Norland.

Su, Wi Qtrs. 2 1½-hr cl. Prereq: 885 or equiv.

**889 Advanced Studies G 3**

Individual field study in partial fulfillment of needs for research experience. Su, Au, Wi, Sp Qtrs. Prereq: 885. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**993 Individual Studies G 1-5**

Planning, conducting, and reporting a special study appropriate to the needs of the individual student.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**995 Seminar in Research G 1-3**

Further development and direction of individual studies and programs of research. Warmbrod

Au, Wi Qtrs. 1 2½-hr cl. Prereq: 886. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Agricultural Engineering

200 Agricultural Engineering Building, 590 Woody Hayes Drive, 292-9338

**General Prerequisites for Courses Numbered 200***Unless otherwise indicated, the prerequisites for 200-level courses are 45 cr hrs in collegiate courses, exclusive of ROTC and phys ed; or specified course(s) numbered 100-199.***225 Introduction to Agricultural Engineering U 3**

Principles of engineering problem solving and communications, statistical description and inference applied to agricultural, food and environmental problems.

Au Qtr. 2 cl, 1 2-hr lab, 1 full-day field trip. Prereq: Soph standing in agri eng. Not open to students with credit for 223. Third writing course component.

**294 Group Studies U 1-5**

Basic studies in agricultural engineering.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**General Prerequisites for Courses Numbered 300 and 400***Unless otherwise indicated, the prerequisites for 300- and 400-level courses are 90 cr hrs in collegiate courses, exclusive of ROTC and phys ed; or specified course(s) numbered 100-399.***325 Biometeorology of Plant and Animal Systems U 3**

Study of the micro- and macro-environmental variables in nature as they relate to engineering of plant and animal production systems. Stombaugh.

Wi Qtr. 3 cl. Prereq: Soph standing in agri eng. Not open to students with credit for 334.

**373 Principles of Soil and Water Engineering U 3**

Applications of level and chain surveying, hydrology, and soil dynamics to problems in agricultural engineering.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: Eng Mech 220.

**425 Analysis of Elementary Biological-Physical Systems U 4**

Mathematical model formulation and analysis techniques developed and applied to elementary biological and physical systems. Lichtensteiger.  
Wi Qtr. 3 cl, 2-hr lab. Prereq: Math 255 or 415. Not open to students with credit for 433.

**481 Introduction to Food Process Engineering U 4**

Introduction to engineering operations in food processing, process control and instrumentation, emphasizing heat transfer and fluid flow.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: Math 151 and Physics 112. Open to non-engineering majors only. Not open to students with credit for ConSysMt 381. Offered in cooperation with Food Science and Technology.

**489 Professional Practice U 2**

Preparation and submission of a comprehensive report, based on a pre-assigned outline, of actual co-op employment in industry.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to Co-Op Program in agri eng. Repeatable to a maximum of 10 cr hrs. Open only to dept majors.

**General Prerequisites for Courses Numbered 500**

*Unless otherwise indicated, the prerequisites for 500-level courses are 15 cr hrs in courses in the same discipline numbered 200 or higher, or 10 cr hrs in courses numbered 200 or higher in the same discipline, plus 10 cr hrs in courses numbered 200 or higher in specified allied disciplines; or baccalaureate degree.*

**525 Electrical Power Systems for Agriculture U 4**

Design and specification of systems and components essential for the distribution of electrical power and for the control of electrical systems for agricultural production units. Lichtensteiger.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 425. Not open to students with credit for 431.

**545 Agricultural Structures U G 4**

Analysis and design of frames and members for agricultural structures. Veenhuizen.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Eng Mech 220.

**565 Utilization of Energy in Agriculture U G 4**

Study of motive and stationary power needs of agriculture, mechanics of traction, characteristics of power sources, morphology of off-the-road vehicle design. Carpenter.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 425 and Mech Eng 501. Not open to students with credit for 535.

**573 Engineering Soil-Water Management U G 4**

Engineering design of drainage, irrigation, and erosion control systems for optimum crop growth, environment, and related water storage structures. Ward.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 373 and Civil En 413 or equiv. Not open to students with credit for 543.

**584 Food Process Engineering U G 4**

Principles of food process engineering with emphasis on design of freezing and drying equipment and thermal sterilization processes. Sastry.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: Mech Eng 501. Not open to students with credit for 546.

**593 Individual Studies U G 1-5**

Advanced study of problems not included in regular courses of this department.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**General Prerequisites for Courses Numbered 600**

*Unless otherwise indicated, the prerequisites for 600-level courses are 15 cr hrs in the same discipline numbered 300 or higher, or 10 cr hrs in courses numbered 300 or higher in the same discipline, plus 10 cr hrs in courses numbered 300 or higher in specified allied disciplines.*

**625 Modeling and Design of Biological Systems U G 4**

Application of transport processes, enzyme kinetics and the simulation of plant and animal growth to the analysis and design of biological systems and processes. Stombaugh and Nokes.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 425, Cptr/Inf 541, Mech Eng 510 or equivs. Not open to students with credit for 608.

**645 Environment al Engineering of Agricultural Structures U G 4**

Functional requirements and principles involved in housing animals and crops; analysis of factors and properties affecting energy exchanges with the environment. Stombaugh.

Wi Qtr. 4 cl. Prereq: 325, Eng Mech 430 and Mech Eng 510.

**692 Similitude Theory and Applications U G 3**

Similitude theory and applications in engineering and bio-engineering experimental research and development. Carpenter.

Sp Qtr. 3 cl. Prereq: Sr standing in engineering. Not open to students with credit for 682.

**693 Individual Studies U G 1-5**

Work on problems that are not included in regular courses; practice in development, organization, solution, and report on problems of student's choosing.

Su, Au, Wi, Sp Qtrs. Prereq: 15 cr hrs of 300 level or higher agri eng courses. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Advanced studies in agricultural engineering with principal emphasis on design.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**695 Professional Development U G 1**

Needs and programs for professional development in engineering related to food, agriculture, and environment; opportunities for professional advancement, engineering ethics, and responsibilities to society. Gustafson.

Au Qtr. 1 1-hr cl. Prereq: 3rd yr standing in agri eng.

**724 Capstone Design in Agricultural Engineering I U G 3**

Methodology of design and practice in the design of a specific system within the student's area of specialization in the discipline.

Au Qtr. 1 2-hr cl. Prereq: 525.

**725 Capstone Design in Agricultural Engineering II U G 3**

Continuation of 724.

Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 724.

**784 Advanced Food Process Engineering U G 3**

Application of heat and mass transfer, fluid flow, food properties, and food processing constraints in the design and selection of food process equipment. Sastry.

Sp Qtr. 3 cl. Prereq: Chem Eng 420, Mech Eng 510, or equiv. Not open to students with credit for 684. Offered in cooperation with Food Science and Technology.

**General Prerequisites for Courses Numbered 800 and 900**

*Unless otherwise indicated, the prerequisites for 800- and 900-level courses are 30 cr hrs in courses in the same discipline, or 20 cr hrs in the same discipline, plus 25 cr hrs in specified allied disciplines.*

**850 Seminar G 1**

Gustafson.

Au, Wi, Sp Qtrs. 1 cl. Repeatable.

**894 Group Studies G 1-5**

Graduate studies in agricultural engineering.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**999 Research G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Agriculture: Interdisciplinary

100 Agricultural Administration Building, 2120 Fyffe Road, 292-6891

**100 Agriculture Survey U 1**

Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of agriculture academic areas of study and services.

Su, Au, Wi, Sp Qtrs. 2 cl. H100 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 101, Arts Col 100, Arts&Sci 100, Engineer 100, Home Ec 100, Nat Res 100, or UVC 100 or H100.

**294 Group Studies U 1-5**

Group study classes or projects in selected interdisciplinary topics in Agriculture.

Su, Au, Wi, Sp Qtrs. Arr.

**351 Agricultural Employment U 1**

Discussion of personal career objectives in agriculture and conducting an effective employment campaign through resumes, cover letters, interviewing, and job offer evaluation. Miller.

Au, Wi Qtrs. 1 cl.

**H590 Agriculture Honors Colloquium U 1**

1 cl.

**H590.01 Research**

Preparation of honors programs, design of honors research projects, and writing of research proposals.

Au Qtr. 1 cl. Prereq: Enrollment in AGR honors program and jr standing or permission of instructor.

**H590.02 Research Presentation**

Preparation, delivery, and evaluation of oral research reports regarding various disciplines within the field of agriculture.

Wi, Sp Qtrs. 1 cl. Prereq: H590.01.

**595 Seminar U 2-5**

Current topics of general interest to undergraduate students in agriculture and natural resources.

Wi Qtr. Arr. H595 (honors) may be available to students enrolled in an honors program or eligible for enrollment. Prereq: Jr or sr standing in the college and written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**597 Issues Concerning Use of Animals by Humans U 5**

The historical, biological, ethical, nutritional, and economic issues of using animals to meet human needs. Stephens and Schmidt.

Su, Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: Sr standing. GEC/LAR course.

**797 Interdepartmental Seminar U G 1-2**

Two or more departments or colleges may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable by permission. This course is graded S/U.

## Agronomy

202 Kottman Hall, 2021 Coffey Road, 292-2001

**200 Crop Science U 5**

Study of environmental, genetic, and cultural factors which influence crop plant productivity.

Au, Wi Qtrs. 4 cl, 1 2-hr lab. Prereq: Biology 101 or 113. Not open to students with credit for Hort 200 or 201. This course is available for EM credit. NS Admis Cond course. BER/BEC/LAR course.

**210 Data Analysis and Interpretation for Decision Making U 5**

Basic concepts of probability and statistics applied to the interpretation of quantitative data.

Au, Wi Qtrs. 4 cl, 1 2-hr rec/lab. Prereq: Math 130 or 148. Not open to students with credit for Agr Econ 205; Agr Educ 387; Animl Sc 210; or Stat 125, 135, or 145. Cross-listed in Animal Science. GEC course.

**240 Soil Science U 5**

Introduction to soil physical, chemical, and biological properties as related to land use, environmental quality, and crop production; laboratory includes observation and quantitative determination of these soil properties. Eckert.

Su, Au, Wi Qtrs. 4 cl, 1 2-hr lab. Prereq: Chem 101 or 121. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

**250 Soil Morphology and Classification U 3**

Techniques and format employed for writing detailed soil descriptions and experience in the classification of soils according to *Soil Taxonomy*. Bigham and Smeck.

Sp Qtr. 2 cl, 1 1-hr lab, 3 Sat field trips. Prereq: 240 or permission of instructor.

**411 Grain Crops U 3**

Study of grain crops; classification, distribution, variety selection and improvement, cultural practices, harvesting, and utilization. Henderlong.

Au, Wi Qtrs. 3 cl. Prereq: 200 or equiv.

**412 Forage Crops U 3**

Growth characteristics, adaptation and utilization of different species for hay, pasture, silage, and land conservation. Henderlong.

Sp Qtr. 3 cl. Prereq: 200 or equiv.

**413 Principles of Turfgrass Selection and Management U 4**

Adaptation, identification, uses, growth characteristics, growth responses, and fundamental principles essential to the production of quality turf. Danneberger.

Au Qtr. 2 cl, 1 2-hr cl. Prereq: 200 or Hort 201.

**414 Crop Science Laboratory U 2**

Experimental approach to forage and grain crop growth and development with emphasis on the relationship of crop characteristics to management, quality, and utilization.

Au, Sp Qtrs. 1 3-hr lab, 1 day field trip. Prereq: 411; prereq or concur: 412.

**422 Principles of Weed Science U 4**

A study of weeds, their identification, reproduction, and methods of control; emphasis on various aspects of chemical control measures. Harrison and Regnier.

Au, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: 200.

**442 Soil Management U 5**

An integrated study of fertility, tillage, erosion control, and water management in maintaining soil productivity and a quality environment. Smeck.

Wi Qtr. 5 cl. Prereq: 240 or permission of instructor.

**489 Agronomic Employment Experience U 3**

Su, Au, Wi, Sp Qtrs. Equiv of 10 wks employment. Prereq: Written permission of adviser before employment and 10 hrs of agronomy. Repeatable to a maximum of 6 cr hrs. A final written report must be submitted to the adviser. Open only to dept majors.

**494 Group Studies U 3-5**

Selected topics in crop science and/or soil science.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**510 Crop Production in Developing Countries U G 5**

Fundamental studies of field and plantation crops in tropical and subtropical countries with emphasis on means and techniques for obtaining production increases.

Sp Qtr. 5 cl. Prereq: 200 and 240 or equiv.

**522 Turfgrass Management and Science U G 4**

A study of cultural practices and environmental factors affecting the maintenance of quality turf. Danneberger.

Sp Qtr. 2 cl, 1 2-hr cl. Prereq: 413.

**540 Urban and Sports Turf Soils U G 3**

Soil science relevant to urban use, including problems associated with urban soil, urban and sports turf soil design, and playability of sports turf soils. McCoy.

Sp Qtr. 3 cl. Prereq: 240 or permission of instructor.

**550 Pedology and Edaphology U G 5**

A comprehensive study of soil with respect to its components, morphology, and genesis; how morphology influences soil behavior especially as it pertains to Ohio conditions. Hall.

Sp Qtr. 3 cl, 1 2-hr lab and field trips. Prereq: 200 or 240 and 442.

**580 Soil Fertility****580.01 Soil Fertility and Fertilizers U G 3**

Principles of soil fertility, plant nutrition, and fertilizer management; environmental considerations and low input concepts in soil fertility. Eckert.

Wi Qtr. 3 cl. Prereq: 240.

**580.02 Soil Testing and Plant Analysis U G 2**

Methods of evaluating soil fertility and plant nutritional status; reactions and fates of nutrients under varying soil conditions.

Wi Qtr. 2 3-hr labs. Prereq or concur: 580.01.

**591 Workshop in Agronomy U G 3**

Study of selected topics in crop and soil science for teachers of vocational agriculture and extension agents.

Su (1st term) Qtr. 4 2-hr cl per wk for 3 wks. Prereq: At least 5 cr hrs of previous course work in agronomy or the equiv. Repeatable to a maximum of 12 cr hrs.

**593 Individual Studies U G 3 or 5**

Students may select special agronomic problems, not included in regular courses and involving library, laboratory, or field studies.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**595 Undergraduate Seminar U 2**

Review and interpretation of research publications and study of functions of agronomic industries. Everett.

Wi, Sp Qtrs. 2 cl. Prereq: 15 cr hrs in agronomy and 3rd or 4th yr standing in agronomy.

**598 Turfgrass Science Seminar U G 1**

Academic and industry experts present information and lead discussion on current issues facing the turfgrass industry.

Wi Qtr. 1 cl. Prereq: Jr or sr standing in hort or agronomy, or permission of instructor. Repeatable to a maximum of 2 cr hrs.

**600 Issues in Agronomy U 5**

Research, analysis, and synthesis of current and/or long-standing issues affecting agronomy; requires research papers, group projects, oral presentations, and responsive essays.

Wi, Sp Qtrs. 2 2-hr cl, 1 cl. Prereq: 200 and 240, second writing course, and sr standing in Agronomy. GEC course.

**602 Field Crop Ecology U G 3**

A study of the agroecosystem; the ecology of managed agricultural systems; the interrelationships of climates, soils, and organisms in crop production.

Wi Qtr. 3 cl. Prereq: 10 cr hrs of crops courses and 5 cr hrs of soils courses at the 300 level or higher.

**612 Principles of Grassland Management U G 5**

Plant-animal requirements and correlations in the maintenance, management, and utilization of meadows, pastures, and ranges. Henderlong.

Sp Qtr. 5 cl and 1 field trip arr per qtr.

**613 Integrated Management of Turfgrass Insects, Diseases, and Weeds U G 4**

Identifying the most appropriate genetic, cultural, biological, and chemical programs for reducing pest damage.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 413, 422, and Plnt Pth 401. Not open to students with credit for Plnt Pth 613. Cross-listed in Plant Pathology.

**620 Plant Cell Transformation U G 3**

Principles of plant tissue culture as related to biotechnology and agronomic and horticultural crop improvement. Finer.

Au Qtr. 2 1½-hr cl. Prereq: Mol Gen 500 and Plnt Bio 630, or equiv, or permission of instructor. Not open to students with credit for Hort 620. Cross-listed in Horticulture.

**621\* Crop Physiology and Production U G 3**

A study of the physiological aspects of crop growth and how they relate to various cultural practices; main emphasis will be on corn and soybeans. McDonald.

Wi Qtr. 3 cl. Prereq: Plnt Bio 436 or equiv.

**625 Field Crop Breeding U G 4**

Principles of genetics and methods of plant breeding applied to the improvement of field crops and the ultimate development of superior varieties. St. Martin.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 200; Agronomy 411 or 412; and Mol Gen 140 or 500. Not open to students with credit for 530.

**630+\* Seed Science U G 3**

A study of the physiological processes of seed formation, dormancy, and germination; the production and marketing of seed in commerce. McDonald.

Wi Qtr. 3 cl. Prereq: 15 cr hrs of agronomy, hort, or equiv at the 300 level or higher.

**635\* The Plant Genome U G 3**

Study of chromosomal and genomic structure, function, and organization in higher plants. Pratt.

Au Qtr. 2 1½-hr cl. Prereq: Mol Gen 500 or Mol Gen 501.

**636\* Mineral Nutrition of Plants U G 3**

Process of uptake, transport, and metabolism of mineral nutrients, with emphasis on nitrogen, and on process at the tissue and cellular level. Streeter.

Au Qtr. 2 2-hr cl. Prereq: Biochem 511, Plnt Bio 436 or 630; Plnt Bio 643 recommended. Not open to students with credit for Plnt Bio 636. Cross-listed in Plant Biology.

**640+\* Agroclimatology U G 3**

A study of the radiation regime of the atmosphere in relation to the thermal and water regimes of soils and their interrelationships in crop production. McCoy.

Au Qtr. 3 cl. Prereq: 15 cr hrs of agronomy, botany, hort, or equiv at the 300 level or above or permission of instructor.

**643\* Soils of the Tropics U G 3**

Review of soil resources of the tropics and their management based on climate, vegetation, soil types and their geographic distribution, soil properties, traditional and improved soil management systems. Calhoun.

Wi Qtr. 3 cl. Prereq: 15 cr hrs of agronomy, numbered 300 or higher or permission of instructor.

**650\* Advanced Soil Classification Morphology and Genesis U G 5**

Theory and principles of soil classification schemes emphasizing the 7th Approximation; classification and genesis of major soils of the world; methods to establish parent material homogeneity and indices of soil weathering. Bigham and Hall.

Wi Qtr. 4 cl, 1 2-hr lab; and 3 2-hr labs or 3 1-day field trips arr per qtr. Prereq: 550, 10 cr hrs from the following: 442, Geol Sci 550 and 650.

**660 Soil Microbiology U G 3**

Diversity of soil microorganisms, their habitats in soil, cycling of major nutrients, transformation of xenobiotics and heavy metal, and microbial colonization of plant roots. Bauer.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 442, Micrbiol 509, and Chem 251.

**665 Environmental Microbiology U G 3**

The role of microorganisms and underlying biological principles in elemental cycles and degradation of natural and man-made compounds. Tuovinen.

Sp Qtr. 3 cl. Prereq: Chem 251 and Micrbiol 509 or 520. Not open to students with credit for Micrbiol 665. Cross-listed in Microbiology.

**671 Soil Physics U G 5**

A study of the physical makeup and properties of soil, including structure, thermal relationships, consistency, plasticity, water, and their relationships. Lal.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 442, Physics 131, and Math 151.

**675 Fate of Pollutants in Soils and Natural Waters U G 3**

Overview of source, modes of introduction, modes of transport, chemical and biological fate, and environmental impact of pollutants in soil-water environments. Traina and Logan.

Au Qtr. 2 1½-hr cl. Prereq: Two qtrs of chemistry and one qtr of biology or plnt bio.

**680 Soil Chemistry U G 5**

Introduction to chemical processes in soils and their application in nutrient cycling, plant nutrition waste disposal, acid rain, fate of pesticides, and heavy metals. Logan.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 240 and Chem 123. Not open to students with credit for 570.

**H683 Honors Project U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr 590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

**693 Individual Studies U G 3 or 5**

Students may select special agronomic problems, not included in regular courses and involving library, laboratory, or field studies.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Discussion of selected topics in crop science and/or soil science.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**695\* Organic Soils U G 3**

A comprehensive study of organic soils, their formation, chemical and physical characteristics, classification, and management. Everett.

Au Qtr. 3 cl, 2 1-day field trips. Prereq: Geol Sci 101 and 25 cr hrs of plnt bio or chem.

**750\* Soil Mineralogy U G 5**

Theory and application of methods for analyzing minerals in soil environments, including X-ray, thin section, electron optical, thermal, and wet chemical techniques. Bigham.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 15 cr hrs selected from: 550, 671, 772, Geol Sci 621, 623, 637, 639, Chem 520, 651, 676.

**760 Soil Biochemistry U G 4**

Soil biochemical techniques, elemental transformations, biologically active compounds, pesticide metabolism, and fate of genetic materials in soils. Dick.

Sp Qtr. 2 2-hr cl. Prereq: 240, Chem 231, and Biochem 511.

**772\* Thermodynamics of Soil Solution****772.01 Thermodynamics of Soil Solution U G 3**

A study of the thermodynamics of precipitation-dissolution, electrochemical, and ion-exchange reactions in soils and sediments. Traina.

Wi Qtr. 3 cl. Prereq: Chem 520 or written permission of instructor. Not open to students with credit for 772 or 672. Agronomy students must enroll concurrently in 772.02.

**772.02 Thermodynamics of Soil Solutions: Laboratory U G 2**

An experimental approach to thermodynamics of soil solutions.

Wi Qtr. 2 3-hr lab. Prereq or concur: 772.01.

**780 Characteristics, Management, and Environmental Impact of Organic Wastes U G 3**

Survey of organic wastes; their production, characteristics, treatment, utilization, environmental impact, and regulation. Logan.

Wi Qtr. 2 1½-hr cl. Prereq: Sr or grad standing and at least 20 hrs of chemistry and biology.

**798 Current Topics in Environmental Science and Engineering U G 1**

Seminar course which presents current research findings on environmental quality and pollution control.

Au, Sp Qtrs. 1 cl. Prereq: Grad standing in engineer, science, nat res, or agr, or permission of instructor. Not available for simultaneous credit as civil en or nat res. Repeatable to a maximum of 3 cr hrs. Cross-listed in Civil Engineering and Natural Resources.

**822 Physiological and Biochemical Aspects of Herbicides G 5**

Herbicide absorption, course, fate, and mode of action in plants; persistence and fate in soils. Harrison.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Biochem 631 and Plnt Bio 630 or 631.

**825+\* Advanced Plant Breeding G 3**

Theory and methods of plant improvement; statistical genetics, methods for self- and cross-fertilizing crops, chromosomal manipulation. St. Martin.

Sp Qtr. 2 1½-hr cl. Prereq: 625 or Hort 601; and Mol Gen 650.

**826\* Qualitative Genetics in Plant Breeding G 4**

In- depth review of recent advances in the theory and methodology of plant improvement using qualitative or simply inherited traits.

Sp Qtr. 2 2-hr cl. Prereq: 625 or Hort 601 or permission of instructor.

**830 Current Topics in Plant Molecular Biology G 3**

Readings from the current literature will be examined in detail for both technical and conceptual content.

Sp Qtr. 2 2-hr cl. Prereq: 621 or Mol Gen 632, Mol Gen 701, Plnt Bio 630, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**832 Plant-Bacteria Interactions G 5**

Bacterial pathogens and symbionts affecting plant health and productivity; molecular, cellular, and environmental determinants of plant-microbe interactions; and successful biological control. Bauer and Coplin.

Sp Qtr. 3 2-hr cl. Prereq: Plnt Pth 600 or Micrbio 520, [q]Mol Gen 501 or Micrbio 581 and Biochem 511; or permission of instructor. Not open to students with credit for Plnt Pth 832. Cross-listed in Plant Pathology.

**843 Molecular Plant-Microbe Symbiosis G 3**

Recent advances in molecular plant-microbe symbiosis; topics may include *Rhizobium*-legume, *Azolla-Anabaena*, *Frankia*, and mycorrhizal symbioses.

Wi Qtr. 2 1 1/2-hr cl. Prereq: Mol Gen 500 or 501, or Biochem 511 and Plnt Bio 622, or permission of instructor

**8701\* Soil-Plant Relationships G 3**

Discussion of recent literature pertaining to growth response curves, nutrient uptake, movement of nutrients in the soil, and measurement of availability of nutrients to plants. Eckert.

Sp Qtr. 3 cl. Prereq: 20 cr hrs of soil and/or plant sciences and 10 cr hrs of plant physiology.

**8711\* Advanced Soil Physics G 3**

Moisture, gaseous, and thermal processes and regimes in vegetated soils and their influences on plant growth. Lal.

Wi Qtr. 3 cl. Prereq: 671 and permission of instructor.

**8721\* Surface and Colloid Chemistry of Soils G 3**

A study of the surface and colloid chemistries of soils, sediments, and reference mineral systems. Traina.

Wi Qtr. 2 1 1/2-hr cl. Prereq: 772.01 or permission of instructor.

**880 Seminar G 1**

Discussion of current problems in agronomy.

Su, Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**885 Research Principles and Techniques G 1**

The philosophy of graduate education and the description of the techniques and special equipment most useful for conducting research in crop and soil science. Bigham.

Au Qtr. 1 cl. This course is graded S/U.

**887 Techniques of Experimental Design G 5**

A study of experimental designs and their application to agricultural research. Henderlong.

Wi Qtrs. 5 cl. Prereq: Mol Gen 650 or Stat 529, and 10 cr hrs of agronomy or related subjects at the 400 level or above.

**892 Interdepartmental Seminar in Plant Physiology G 1**

Students will present seminars on their research or related topics in plant physiology and/or attend seminars by local and visiting researchers.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Not open to students with 12 cr hrs in Biochem 892, Plnt Bio 892, Fd Sc&Te 892, or Hort 892. Repeatable to a maximum of 12 cr hrs, including cr hrs earned in Biochem 892, Plnt Bio 892, Fd Sc&Te 892, and Hort 892. Cross-listed in Biochemistry, Food Science and Technology, Horticulture, and Plant Biology. This course is graded S/U.

**894 Group Studies G 1-5**

Advanced topics in crop science and/or soil science.

Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**993 Individual Studies G 3 or 5**

Students may select special agronomic problems not included in regular courses.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. These courses are graded S/U.

**993.01 Agronomic Instruction**

10 hrs lab.

**993.02 Unclassified****999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**Air Force Aerospace Studies**

353 Converse Hall, 2121 Tuttle Park Place, 292-5441

Qualified students interested in obtaining an officer's commission in the Air Force may enroll in Air Force ROTC classes through contracted agreement between The Ohio State University and the United States Air Force.

The first two years of enrollment (freshman/sophomore), is the General Military Course which includes lessons on aerospace doctrine and history of military aviation. The last two years (junior/senior), is the Professional Officer Course dealing with communicative skills, leadership and management training, and national defense policy.

Air Force ROTC offers four-, three-, two-, and one-year scholarships. The four-year scholarship is applied for during the senior year in high school. Three-, two-, and one-year scholarships are offered to qualified men and women in college in selected Air Force career fields. The benefits provided by scholarships may include full payment of tuition, fees reimbursement for textbooks, and a tax free allowance of \$100 per month. Upon entering the Professional Officer Course all cadets (scholarship and non-scholarship) receive the \$100 per month tax free allowance.

AFROTC requires General Military Course Scholarship cadets to complete an English composition course. All scholarship cadets must complete one year of a foreign language. In addition, Professional Officer Course cadets must complete a mathematical reasoning course prior to commissioning. AFROTC enrolled cadets pursuing an officer commission will attend a 2-hour Leadership Laboratory period each week.

Aerospace Studies courses are open to a limited number of non-cadets with the permission of the instructor. More information on AFROTC classes or scholarships can be obtained by calling the Department of Aerospace Studies at 614-292-5441.

**General Military Course Freshmen and Sophomores****101 The USAF--Officership, Mission, and Organization U 1**

Introduction to officership, followership, customs and courtesies, and the uniform; examination of flight dynamics and the Air Force base organization.

Au Qtr. 1 cl, 2 lab hrs.

**102 The USAF--Professions, Commands, and Doctrine U 1**

The Air Force as a profession; study of Air Combat Command, Air Mobility Command, and the weapon systems employed; discussion of geopolitics, I.S. defense policy, and terrorism.

Wi Qtr. 1 cl, 2 lab hrs. Prereq: 101.

**103 The USAF--Officership, Joint Operations, and Communications U 1**

Examination of Air Force officership; survey of other U.S. military branches; development of verbal and written communication skills within the context of the Air Force.

Sp Qtr. 1 cl, 2 lab hrs. Prereq: 102.

**201 Development of U.S. Air Power U 1**

Survey study of U.S. air power from its inception through World War II, including issues of leadership, technological advances, and air power theory.

Au Qtr. 1 cl, 2 lab hrs. Prereq: 103.

**202 Air Power from 1940's to 1970's U 1**

The role of U.S. air power from 1947 through the initial Cold War years and the Vietnam war.

Wi Qtr. 1 cl, 2 lab hrs. Prereq: 201.

**203 Air Power from 1970's to Present U 1**

The role of air power during the post-Vietnam era with emphasis on regional conflict and growing technological sophistication.

Sp Qtr. 1 cl, 2 lab hrs. Prereq: 202.

**Professional Officer Course Juniors, Seniors, and Graduate Students****301 Management Skills and Communication Techniques U 3**

Development of verbal and written communication skills within the Air Force; introduction to basic management techniques with emphasis on Quality Air Force (QAF) applications.

Au Qtr. 3 cl, 2 lab hrs. Prereq: Completion of General Military Courses or AFROTC Six-Week Summer Camp; or permission of instructor.

**302 Management Behavior and Leadership Concepts U 3**

Study of management techniques with emphasis on motivation; introduction to basic leadership models and their application in an Air Force environment..

Wi Qtr. 3 cl, 2 lab hrs. Prereq: 301 or permission of instructor.

**303 Leadership and Staff Functions U 3**

Study of military leadership, importance of followership, and organizational ethics; introduction of officer career development including administrative and staff functions required of junior Air Force officers.

Sp Qtr. 3 cl, 2 lab hrs. Prereq: 302 or permission of instructor.

**401 National Security Policy and Military Professionalism U 3**

An examination of the needs for national security and an analysis of the evolution of our national defense strategy and policy; actors and processes; the military as an instrument of national power.

Au Qtr. 3 cl, 1 1-hr lab. Prereq: 303 or permission of instructor.

**402 Defense Policy and Decision Making U 3**

Investigation into the strategy and management of conflict, the formulation and implementation of US defense policy, and a study of US interest in regions around the world.

Sp Qtr. 3 cl, 1 1-hr lab. Prereq: 401 or permission of instructor.

**403 Strategic Issues and Preparation for Active Duty U 3**

Investigation of current and future strategic issues; arms current control; introduction to the military justice system; preparation for active duty as an Air Force officer.

Au Qtr. 3 cl, 1 1-hr lab. Prereq: 402 or permission of instructor.

## Allied Medicine

School of Allied Medical Professions

127 School of Allied Medical Professions Building, 1583 Perry Street, 292-5618

**102† Introduction to Health Professions U 2**

An introduction to the professions, both undergraduate and graduate, that contribute to the delivery of health care in America.

Wi Qtr. 2 cl.

**419 Electronic Principles in Medical Instrumentation U 5**

The use of electronic components, circuits, operational amplifiers, and differential amplifiers in medical instrumentation.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: Physics 112, Math 152, and permission of instructor.

**425 Critical Phases in Life I U 3**

An examination of human's development from conception to death and factors critical to continuing health.

Sp Qtr. 3 cl. Prereq: Biology 110 or equiv, and 5 hrs psych.

**500 Medical Terminology U 3**

Terminology pertaining to the treatment of disease, including standard abbreviations, anatomic, diagnostic, symptomatic, eponymic, laboratory, pathologic, radiology, anesthetic, operative, and drug terms.

Au Qtr. 3 cl. Not open to students with credit for 500.01 or 500.02. Cross-listed in Medical Record Administration.

**505 Principles of Disease I U 3**

Basic pathophysiology and its application to the organ systems.

Au Qtr. 3 cl. Prereq: Admission to the School of Allied Medical Professions and Physiol 312 or Zoology 232; or permission of instructor.

**506 Principles of Disease II U 3**

A continuation of 505.

Wi Qtr. 3 cl. Prereq: 505.

**520 Musculoskeletal Disease U G 2-3**

Principles, clinical aspects, and therapeutic procedures related to diseases of the musculoskeletal system.

Sp Qtr. 2-3 cl. Prereq: Admission to the School of Allied Medical Professions or written permission of instructor.

**525 Introduction to Neurodevelopmental Handling U G 2**

Neurodevelopmental management techniques for infants up to two years; geared to physical handling of motor problems resulting from developmental disabilities.

Wi Qtr. 1 2-hr cl. Prereq: Permission of instructor. Not open to students enrolled in physiother.

**530 Neuromuscular Disease U G 3**

Survey of injury and disease of the central, peripheral, and autonomic nervous systems; presentation of clinical material.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**565 Coping with Terminal Illness and Death U 3**

An exploration of the psycho-social needs of the dying, alternative approaches to meeting those needs, and the impact of the attitudes of attending health professionals.

Au, Wi Qtrs. 1 3-hr cl. Prereq: Permission of instructor, 4th yr standing, or health profession credential.

**591 Health Care Organization U 3**

An examination of the roles of public and private organizations in planning and supporting health care, including study of health trends, social legislation, and current professional issues.

Au, Sp Qtrs. 3 cl. Prereq: Enrollment in AMP or NUR or permission of instructor.

**610 The Hospital as an Educational Institution U G 3**

Hospital as a clinical learning environment for medical and allied medical professionals; in-service education; patient and community health education; continuing education.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**612 Managing the Health Care Training Function at the Departmental Level U G 3**

The techniques of in-service training programs; discussion and analysis of the role and function of the training manager.

Wi Qtr. 1 2-hr cl, 1 1 1/2-hr cl. Prereq: Sr or grad standing in allied med or health-related major, jr or sr med comm major. Cross-listed in Medical Communications.

**627 Management of Patient Education Systems U G 3**

Planning, organizing, and evaluating patient education systems and programs in health care organizations.

Au Qtr. 1 2-hr cl, 1 hr arr. Prereq: Sr standing in med comm or med illus, related health professions major or grad standing in health professions. Cross-listed in Medical Communications as 627. Not open to students with credit for Med Comm 625.

**630 Management of Hospital Departments U P G 3**

An analysis of the management process and its application to the hospital setting.

Au, Sp Qtrs. 3 cl. Prereq: Enrollment in AMP or permission of instructor.

**640 Health Promotion and Disease Prevention in Acute Care Organizations U G 3**

Programs in acute care institutions are examined as a means of marketing services, reducing health care costs and changing the roles of allied health practitioners.

Sp Qtr. 2 1 1/2-hr cl. Prereq: Sr or grad standing in allied health or a related field. Cross-listed in Medical Communications.

**648 Microcomputer Applications in Health Science U G 3**

Overview of microcomputer applications in health sciences with practical applications related to discipline specific needs.

Au Qtr. 2 2-hr cl. Prereq: Cptr/Inf 201 or 211, or permission of instructor. Cross-listed in Medical Record Administration.

**650 Application of Computers in Health Sciences U G 3**

Basic concepts related to the application, analysis, planning, and use of computers in health care, education, and research.

Sp Qtr. 2 2-hr cl. Cross-listed in Medical Record Administration.

**654 Computer Applications in Managing Health Information Systems U G 3**

Information resource management in health care, health information databases, software applications, and systems selection.

Wi Qtr. 3 cl. Prereq: 650, Med Rec 648, or permission of instructor. Cross-listed in Medical Record Administration.

**665 Understanding the Aging Process P G 3**

Study of physical and mental health components of normal aging with emphasis on critical components of successful aging, presented as basis for delivery of health services.

Sp Qtr. 2 1 1/2-hr cl.

**680† Research Design in Biomedical Sciences****680.01H Research Design in Biomedical Sciences U 3**

Concepts related to initiating and conducting research; experimental design; use of computer graphics and statistics; and analysis of research reports.

Wi Qtr. 1 2-hr cl, 1 hr arr. Prereq: Eligible for honors program in allied health. This course is graded S/U.

**680.02 Research Design in Biomedical Sciences G 3**

Concepts related to initiating and conducting research; experimental design; use of computer graphics and statistics; and analysis of research reports.

Wi Qtr. 1 2-hr cl, 1 hr arr. Prereq: Grad standing in allied health, pathology, or related field. The design of experiments and statistical concepts are further developed in Stat 528, 529, 530, 641, 645, 661, and Biostat 615.

**693 Individual Studies U G 1-5**

Guided study of selected topics.

Su, Au, Wi, Sp Qtrs. 1-5 cl. H693 (honors) may be available to students enrolled in an honors program and/or by permission of a division within the school. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Supervised group studies of special topics within the various professions of the allied health field.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to maximum of 15 cr hrs.



**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

3 cl. Repeatable to a maximum of 6 cr hrs. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology (Columbus seminars).

**700.01 Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.

Wi Qtr.

**700.02 Changing Societal Values U G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumer/clients/patients.

Sp Qtr. (even numbered years only)

**700.03 Ethical Issues U G 3**

Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, mind control, malpractice, social responsibility of the professions.

Au Qtr.

**700.04 Interprofessional Seminar in Clinical Practice U G 3 or 5**

Interprofessional teamwork in clinical settings.

Wi Qtr. Arr. Prereq: Permission of instructor.

**700.05 Interprofessional Seminar in Policy Analysis U G 3**

Interprofessional exploration of the history, formation, and implementation of public policy issues of significance to seven helping professions.

Wi Qtr. Prereq: Sr standing or permission of instructor.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

Wi Qtr. Prereq: Permission of instructor. This course is graded S/U. (even numbered years only)

**700.07 Interprofessional Approaches to Child Abuse and Neglect U G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

Au Qtr. 1 2 1/2-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Educational Services & Research, Family Relations and Human Development, Human Nutrition, Nursing, Physical Education, Psychology, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families and Handicapped Children**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.

Wi Qtr. 1 3-hr cl. Not open to students with credit in 717.01 in any of the cross-listed areas. Limit of 20 students.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su Qtr. 1 2-hr cl. Not open to students with credit in 717.02 in any of the cross-listed areas. Limit of 20 students.

**730 Managerial Leadership in Allied Health G 3**

Application of managerial leadership principles for the development and administration of allied health departments in the health care system.

Au Qtr. 1 3-hr cl. Prereq: Admission to AMP grad program or permission of instructor.

**753 Teaching in the Allied Health Professions G 3**

Principles and practice of teaching the allied health professions; focuses on various teaching roles and strategies of allied health professionals in academic and clinical settings.

Sp Qtr. 1 3-hr cl. Prereq: Admission to the AMP graduate program or permission of instructor. Cross-listed in Educational Policy and Leadership and Educational Services and Research.

**795 Seminar G 1-3**

Investigation of current topics of interest to allied health practitioners.

Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of Instructor. Repeatable to a maximum of 15 cr hrs.

**850 Issues in Allied Health G 3**

Discussion and critical examination of current issues in the allied health field and their impact on the health professions.

Wi Qtr. 1 3-hr cl, 1 hr arr.

**870 Fundamentals of Curriculum in Allied Health Education G 3**

Study of curriculum antecedents and issues in allied health: an orientation for health professionals which deals with the major curriculum forces which have, and are, shaping allied health education.

Au Qtr. 1 3-hr cl. Prereq: Admission to AMP graduate program or permission of instructor.

**889 Practicum G 2-5**

Practical experience in the educational or administrative setting within the allied health fields.

Su, Au, Wi, Sp Qtrs. 1 1-hr cl, lab arr. Repeatable to a maximum of 10 cr hrs.

**889.01 Educational**

Practical experience in an educational setting within the allied health fields.

Prereq: 3 cr hrs in educational methodology.

**889.02 Administration**

Practical experience in an administrative setting within the allied health fields.

Prereq: HNSA 815 or equiv and written permission of instructor.

**999 Research G 1-9**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

## Animal Science

110 Animal Science Building, 2029 Fyffe Road, 292-6401

Four courses, **202, 310, 420, and 430** are required for the Animal, Dairy, and Poultry Science major and are offered cooperatively by the Department's of Animal Science, Dairy Science, and Poultry Science.

**161 Horseback Riding U 1**

Basic Skills of equitation and an understanding of safety. Subdivided based on skill.

1 3-hr lab. Not available for Animal, Dairy, Poultry Sc Major credit. Students must have medical insurance and pay a stable fee. Travel to barn is at own expense. Cross-listed in Physical Education.

**161.01 Beginning Equitation**

Basic principles of riding and safety with horses.

Su, Au, Wi, Sp Qtrs. Not open to students with credit for Phys Ed 161.01

**161.02 Equitation - Level 2**

Advancement in equitation skills and care for the riding horse.

Su, Au, Wi, Sp Qtrs. Prereq: 161.01 or passing a riding test. Not open to students with credit for Phys Ed 161.02

**161.03 Equitation - Level 3**

Fine tuning of equitation skills in patterns and learning the proper use of bits and training aids

Su, Au, Wi, Sp Qtrs. Prereq: 161.02 or passing a riding test. Not open to students with credit for Phys Ed 161.03

**202 Introductory Animal Sciences U 5**

Role, current organization, history, and characteristics of the animal industries in the world. Clay and Turner.

Au, Wi, Sp Qtrs. 4 cl. 1 2-hr lab. Not open to students with credit for 100, 200, Dairy Sc 202, or Poultry Sc 202. Cross-listed in Dairy Science and Poultry Science.

**210 Data Analysis and Interpretation for Decision Making U 5**

Basic concepts of probability and statistics applied to the interpretation of quantitative data. Davis and St. Martin.

Au, Wi Qtrs. 4 cl, 1 2-hr rec/lab. Prereq: Math 130 or 148. Not open to students with credit for Agr Econ 205, Agr Educ 387, Agronomy 210, Stat 125, 135, or 145. Cross-listed in Agronomy. GEC course.

**241 Fundamentals of the Horse Industry U 5**

Uses of the horse, the economic impact on society, and the basic science of equine nutrition, reproduction, genetics, disease control, housing, and general management. Kline.

Au Qtr. 3 cl, 1 3-hr lab.

**300 Equine Selection and Evaluation U 3**

Understanding the relationship of form to function; evaluating conformation and performance, and orally defending that evaluation. Kline.

Wi Qtr. 3 2-hr labs. Prereq: 202 or 241, or Dairy Sc 202 or Poultry Sc 202. The student will pay a lab fee.

**310 Principles of Animal Systems Physiology U 5**

Introductory course that surveys organs/systems within the body and relates the functional physiology of those systems to animal production. Pope.

Wi, Sp Qtrs. 5 1-hr cl. Prereq: Biology 110 or 113; Dairy Sc 202 or Poultry Sc 202 or Animl Sc 202. Not open to students with credit for Dairy Sc 310 or Poultry Sc 310. Cross-listed in Dairy Science and Poultry Science.

## 32 Animal Science

### 380 Practical Horse Feeding U 5

Nutrient needs of the horse; significance of supplements and feeds as they relate to the horse's nutrition and health.

Sp qtr. 5 cl. Not available for Animl, Dairy, Pltry Sc Major credit. Not open for students with credit for Animl Sc, Dairy Sc, Pltry Sc. 430 or 632.

### 381 Equine Farm Operation and Marketing U 4

Designing a horse operation; using computer programs for horse farm management; developing promotion, and sales strategies; conducting an auction sale. Kline.

Wi Qtr. 2 1-hr cl, 2 2-hr labs. Prereq: 241 and permission of instructor. Limited to 20 students. Not available for Animal, Dairy, Poultry Science Major credit.

### 382 Equine Behavior, Conditioning, and Farrier Science U 4

Understanding behavior and physiology of conditioning of the horse and using that knowledge to produce humane training methods; practical experience in farrier science. Kline.

Su, Au, Wi Qtrs. 5 2-hr labs. Prereq: Permission of instructor. Limited to ten students. Not available for Animl, Dairy, Pltry Science Major credit. Students must have medical insurance and will pay a stable fee for the course.

### 412 Application of Reproductive Management to Livestock U 4

A practical introduction to the various tools and techniques available to improve the reproductive performance of livestock. Pope.

Wi Qtr. 4 cl. Prereq: 310 or Dairy Sc 310, or Pltry Sc 310; or permission of instructor. Not open to students with credit for 312 or 612 or Dairy Sc 312, 412, or 612. Cross-listed in Dairy Science.

### 420 Principles of Genetic Improvement U 5

An introduction to the methods available for bringing about genetic change in farm animals. Davis and Irvin.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 100 or 200 or 202, or Dairy Sc 202 or Pltry Sc 202; and Animl Sc 210 or Agr Econ 205 or Agr Educ 387 or Agronomy 210 or Stat 145; and Biology 113. Not open to students with credit for Dairy Sc 420 or Pltry Sc 420. Cross-listed in Dairy Science and Poultry Science.

### 430 Principles of Animal Nutrition U 5

A study of the fundamental principles of nutrition in mammals and birds. Firkins and Latshaw.

Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 100 or 200 or 202 or Animl/Dairy/Pltry Sc 202 or Nat Res 200 and Biology 113. Not open to students with credit for Dairy Sc 430 or Pltry Sc 430. Cross-listed in Dairy Science and Poultry Science.

### 431 Feeds and Feeding U 5

Evaluation of feedstuffs used and dietary formulations for swine, poultry, sheep, beef, and dairy; practical feeding programs for each species will be presented. Loerch and Mahan.

Sp Qtr. 4 1-hr cl, 1 1-hr recitation, 1-day field trip. Prereq: 430 or Dairy Sc 430 or Pltry Sc 430. Not open to students with credit for Animl Sc or Pltry Sc 635 or 735. Cross-listed in Dairy Science and Poultry Science.

### 452 Principles of Meat Science U 3

Analysis of the principles of meat science as related to meat animal value factors, processing technology, and merchandising systems affecting the producer, processor, and consumer. Parrett.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 5 cr hrs animl sc.

### 453 Meat Science Products Laboratory U 3

Procedures and value factors involved in meat animal harvest, carcass evaluation, fresh meat processing, cured-processed meat production, and retail merchandising. Parrett.

Au, Wi, Sp Qtrs. 2 3-hr labs. Prereq or concur: 452.

### 455 Meat Animal and Carcass Evaluation U 3

The factors that influence the value of meat animals, carcasses, and wholesale cuts in accordance with recognized grading standards; laboratory practice.

Wi Qtr. 1 cl, 2 2-hr labs. Prereq: 200.

### 460 Animal Growth and Development U 4

Evaluation of biological processes which contribute to prenatal and postnatal growth of meat animals. Mahan.

Au Qtr. 4 cl. Prereq: Anml/Dairy/Pltry Sci 310, 420, 430.

### 481 Equine Reproduction Management U 5

Study of equine reproductive management and its use in a breeding and foaling program with emphasis in mare and stallion care for maximum reproductive efficiency. Kline.

Sp Qtr. 3 1-hr cl, 2 2-hr labs. Prereq: 241 and 380 or Animl Sc, Dairy Sc, Pltry Sc 430. Not available to students with credits for 581.

### 489 Internship in Animal Science U 1-6

Supervised preplanned employment experience and/or on-site problem solving study program with approved animal production industry or research enterprise; written comprehensive report required.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 15 cr hrs in animl sc and permission of instructor. Open only to dept majors. This course is repeatable to a maximum of 10 cr hrs and is graded S/U.

### 494 Group Studies U 3-5

Special topic area group studies formally proposed for a specific quarter by an animal science faculty member.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 500 Livestock Selection and Evaluation U G 4

Laboratory exercises employing current standards of animal excellence including carcass value for the selection and improvement of farm livestock. Turner.

Wi Qtr. 4 2-hr lab-discussions. Prereq: 202 or Dairy Sc 202 or Pltry Sc 202 and jr standing.

### Livestock Marketing

See Agr Econ 522. Offered in cooperation with Agr Econ.

### 522 Genetic Improvement of Beef Cattle U G 3

Use of genetic principles to develop breeding plans for selection of seedstock herds for economic traits and their utilization in commercial production. Turner.

Wi Qtr. 3 cl. Prereq: 420 or Dairy Sc 420 or Pltry Sc 420.

### 523 Genetic Improvement of Swine U G 3

Application of genetic principles for swine improvement; selection, mating, testing for predicting genetic value, and use of data in decision-making criteria for economically important characteristics. Irvin.

Sp Qtr. 3 cl. Prereq: 420 or Dairy Sc 420 or Pltry Sc 420.

### 530 Comparative Animal Nutrition U 5

Advanced principles of animal nutrition. Firkins and Latshaw.

Wi Qtr. 5 cl. Prereq: 430 or Dairy Sc 430 or Pltry Sc 430, second writing course, and jr or sr standing. Not open to students with credits for Dairy Sc 530 or Pltry Sc 530. Cross-listed in Dairy Science and Poultry Science. GEC course.

### 542 Beef Cattle Production and Management U G 5

The application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of beef cattle. Day.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Animl, Dairy, or Pltry Sc 310, 420, and 430.

### 543 Swine Production U G 5

The application of science and basic principles of nutrition, physiology, genetics, health, economics, meats, and housing in integrated management systems for modern swine production.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: Animl, Dairy, or Pltry Sc 310, 420, 430.

### 544 Sheep Production and Management U G 5

The application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of sheep. Baertsche.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: Animl, Dairy, or Pltry Sc 310, 420, and 430.

### 550 Meat Processing U G 3

Fundamental changes in soft animal tissues resulting from comminution and application of chemicals and heat. Parrett.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: 452.

### 560 Capstone Course in Animal Sciences U 5

Relationship of the animal sciences to the emerging and continuing issues facing society. Schmidt.

Wi, Sp Qtrs. 3 2-hr cl. Prereq: 542 or 543 or 544, or Dairy Sc 440 or 640, or Pltry Sc 541, and second writing course. Not open to freshmen or sophomores. GEC course.

### 563 Advanced Swine Production Science U 5

Integration of swine production advances and their application to modern swine service systems; swine literature will be evaluated.

Sp Qtr. 3 2-hr cl. Prereq: 543 and permission of instructor.

### 593 Individual Studies U G 2-5

Special assignments and elementary research; problems assigned after consultation with instructor in charge.

Su, Au, Wi, Sp Qtrs. H593 (honors) may be available to students enrolled in an honors program or eligible for enrollment. Prereq: 2.50 cumulative p-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**610 Physiology of Lactation U G 3**

The physiological, endocrine, nutritional, and environmental factors influencing the synthesis and ejection of milk. Schanbacher.

Au Qtr. 2 1-hr cl, 1 2-hr lab. Prereq: Vet Phys 411 and 20 cr hrs or animl sc or dairy sc or vertebrate biology. Not open to students with credit for Dairy Sc 610. Cross-listed in Dairy Science.

**612 Physiology of Reproduction U G 5**

Physiology and endocrinology of the reproductive systems; examination of basic mechanisms governing reproduction in various species. Ottobre and Pate.

Au, Sp Qtrs. 3 cl, 1 hr recitation, 1 2-hr lab. Prereq: 310 or Dairy Sc 310 or Pltry Sc 310, and second writing course. Not open to students with credit for Dairy Sc 612. Cross-listed in Dairy Science. GEC course.

**632 Equine Nutrition U G 5**

Physiology, biochemistry, and practical application of feeding horses.

Sp Qtr. 5 cl. Prereq: 430.

**650 Advanced Meat Technology U G 3**

Evaluation of scientific contribution to meat products and processing. Ockerman.

Sp Qtr. 2 cl, 2 1-hr labs. Prereq: 15 cr hrs chem, 5 cr hrs micrbiol, and 5 cr hrs anatomy.

**651 Laboratory Analysis of Meat Products U G 5**

Analysis of meat products by physical, chemical, and microbiological techniques. Ockerman.

Wi Qtr. 2 cl, 2 1-hr labs, 4 hrs arr. Prereq: 452 and 453 or permission of instructor, 10 cr hrs chem, and 5 cr hrs micrbiol.

**654 Quality Control Interpretation U G 3**

Sampling, statistical plotting, and chart interpretation using examples drawn from the food area. Ockerman.

Sp Qtr. 3 cl.

**693 Individual Studies U G 3-5**

Special assignments and advanced research; problems assigned after consultation with the instructor in charge.

Su, Au, Wi, Sp Qtrs. H693 (honors) may be available to students enrolled in an honors program or eligible for enrollment. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 3-5**

Special assignments and advanced research; problems assigned after consultation with the instructor in charge.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**710† Advanced Reproductive Physiology U G 4**

Recent advances in research in mammalian reproduction. Ottobre.

Wi Qtr. 2 2-hr cl. Prereq: 612 or Dairy Sc 612; and acceptable courses in physiol, cbn&anat, and biochem. Not open to students with credit for Dairy Sc 710. Cross-listed in Dairy Science.

**721 Genetics of Animal Populations I U G 3**

Parameters of static populations, genetic arrays and equilibria, and statistical measures; partitioning the phenotypic variance mutation, migration, selection, and chance. Irvin.

Wi Qtr. 3 cl. Prereq: 420 or Mol Gen 500; and Mol Gen 650 or equivs. Not open to students with credit for Dairy Sc 721 or Pltry Sc 721. Cross-listed in Dairy Science and Poultry Science.

**722 Genetics of Animal Population II U G 3**

Selection for polygenic characters, mating systems, and development of breeding plans. Irvin.

Sp Qtr. 3 cl. Prereq: 721 or Dairy Sc 721 or Pltry Sc 721 or equiv. Not open to students with credit for Dairy Sc 722 or Pltry Sc 722. Cross-listed in Dairy Science and Poultry Science.

**731 Ruminant Physiology, Nutrition, and Metabolism G 3**

Study of physiology and nutrient metabolism of ruminants; microbial metabolism and fermentative processes will be discussed.

Wi Qtr. 2 1½-hr cl. Prereq: Animl/Dairy/Pltry Sc 310, 430, and Biochem 511 or permission of instructor. Not open to students with credit for Dairy Sc 731. Cross-listed with Dairy Science.

**732 Research Techniques in Animal Nutrition G 3**

Practical exposure to the techniques involved in ruminant and nonruminant research. Firkins.

Au Qtr. 2 3-hr lab. Prereq: Animl/Dairy/Pltry Sc 430 and Biochem 511, or permission of instructor. Not open to students with credit for Dairy Sc 732. Cross-listed with Dairy Science.

**733 Nutrition in the Support of Growth U G 5**

A functional approach to the study of nutrition for support of growth and maintenance in animals and humans. Lilburn.

Wi Qtr. 5 cl. Prereq: Animl/Dairy/Pltry Sc 310, Biochem 511, and Animl/Dairy/Pltry Sc 430 or Humn Ntr 610, or permission of instructor. Not open to students with credit for Dairy Sc 733 or Fd Sc&Te 733 or Pltry Sc 733. Cross-listed in Dairy Science, Food Science and Technology, and Poultry Science.

**734 Nutrition in the Support of Reproduction U G 3**

A functional approach to the study of nutrition for support of reproduction in animals and humans. Day and Latshaw.

Sp Qtr. 3 cl. Prereq: Animl/Dairy Sc 412 or 612, Animl/Dairy/Pltry Sc 430, and Biochem 511. Not open to students with credit for Dairy Sc 734 or Pltry Sc 734. Cross-listed in Dairy Science and Poultry Science.

**800 Seminar G 1**

Discussions of current animal science research.

Su, Au, Wi, Sp Qtrs. 1 1-hr cl. Prereq: Animl sc grad standing or permission of instructor. Students may not register for more than 10 cr hrs under this number. All seminars except 800.01 are graded S/U.

**800.01 Introduction to Seminar**

This course is graded A-E.

**800.02 Nonruminant Nutrition****800.03 Ruminant Nutrition****800.04 Reproductive Physiology Seminar****800.05 Biotechnology and Growth****800.06 Animal Genetics****800.07 Meat Science Seminar****800.08 Interdisciplinary Seminar****810 Advances in Physiology of Domestic Animals G 3**

Au, Wi, Sp Qtrs. 1 4-hr cl. Prereq: Written permission of instructor and acceptable courses in physiol, cbn&anat, and biochem. Not open to students with credit for Dairy Sc 810 or Pltry Sc 810. Cross-listed in Dairy Science and Poultry Science.

**810.01\* Anterior Pituitary Function**

Bacon.

Au Qtr.

**810.02\* Endocrinology of Reproduction**

Wi Qtr. Pate.

**810.03 Immunology and Immunogenetics**

Hines.

Sp Qtr.

**810.05†\* Mammalian Germ Cells**

Wi Qtr. Pope.

**820 Current Topics in Animal Genetics**

Prereq: Acceptable courses in animal genetics, math, and statistics. Not open to students with credit for Dairy Sc 820 or Pltry Sc 820. Repeatable to a maximum of 12 cr hrs. Cross-listed in Dairy Science and Poultry Science.

**820.01†\* Selection Index Theory G 1-3**

Allaire.

Au Qtr.

**820.02†\* Research Methods in Animal Genetics G 1-3**

Wi Qtr. Davis.

**820.04†\* Modeling of Breeding Systems G 1-3**

Allaire and Davis.

Sp Qtr.

**820.07 Seminar in Animal Genetics Research G 1**

Review of literature related to genetics improvement of agricultural animal populations. Allaire.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Acceptable courses in animal genetics, math, and stat. Not open to students with credit for Dairy Sc 820 or Pltry Sc 820. This course is graded S/U. Repeatable to a maximum of 12 cr hrs. Cross-listed in Dairy Science and Poultry Science.

**830 Advanced Studies in Nutrition G 3**

Au, Wi, Sp Qtrs. 3 or 4 cl. Prereq: 630 or 631 or Humn Ntr 610; Fd Sc&Te 761 and 762; 10 grad cr hrs in physiol. Not open to students with credit for Dairy Sc 830 or Humn Ntr 830 or Pltry Sc 830. Cross-listed in Dairy Science, Food Science and Technology, Human Nutrition and Food Management, and Poultry Science.

**830.01†\* Energy**

Latshaw, Palmquist, and Snook.

Sp Qtr.

**830.02\* Minerals**

Mahan.

Au Qtr.

**830.031\* Proteins and Amino Acids**

Johnson.  
Wi Qtr.

**830.04\* Vitamins**

Lilburn.  
Wi Qtr.

**830.05\* Lipids**

Allred.  
Au Qtr.

**830.07\* Rumen Microbiology**

Dehority.

Su Qtr. This course is not available in humn ntr or pltry sc.

**830.081\* Carbohydrates**

Roehrig.  
Au Qtr.

**840 Advanced Studies in Molecular Endocrinology G 5**

Combined lecture/laboratory course on the molecular and cellular basis of hormone action and state-of-the-art methodologies in molecular endocrinology.

Su Qtr. Prereq: Biochem 511 or equiv and permission of instructor. Cross-listed in Dairy Science and Poultry Science.

**850 Molecular Biology Techniques G 4**

Combined lecture/laboratory in the techniques of nucleic acid isolation, analysis, hybridization, sequencing, cloning, expression, and associated biotechnologies.

Su Qtr. 102-hr cl, 104-hr lab. Prereq: Biochem 521 or 613 or equiv. Not open to students with credit for Dairy Sc or Pltry Sc 850. Cross-listed in Dairy Science and Poultry Science.

**856\* Food in International Agriculture G 3 or 5**

A study of international food production, processing, and utilization. Ockerman.

Su Qtr. 5 cl, 1 1-hr lab. Repeatable to a maximum of 6 cr hrs.

**898 Interdepartmental Seminar in Nutrition G 1**

A seminar in nutrition and in related fields of food technology.

Sp Qtr. Given cooperatively by Animal Science, Dairy Science, Food Science and Technology, and Poultry Science. This course is graded S/U.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Anthropology

244 Lord Hall, 124 West 17th Avenue, 292-4149

**200 Introduction to Physical Anthropology U 5**

A scientific examination of humans as a biological and cultural organism based on primate evolution from living and fossil evidence; evolutionary theory and population adaptability. Crews, Poirier, Scullin, and staff.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Biology 101 or equiv. Not open to students with credit for 251. BER/GEC/LAR course. NS Admis Cond course.

**201 World Prehistory: An Anthropological Perspective U 5**

World prehistory from the origin of human culture through the development of civilization illustrated by selected examples; archaeological field method; concepts of analysis and interpretation. Dancey, Gremillion, and Yerkes.

Su, Au, Wi, Sp Qtrs. 5 cl. H201 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 261. BER/GEC/LAR course. SS Admis Cond course.

**202 Peoples and Cultures: An introduction to Cultural Anthropology U 5**

Comparative survey of tribal and peasant peoples in the several world culture regions; culture concepts; study of selected topics. Arewa, Chen, Moore, Walker, and Zaharlick.

Su, Au, Wi, Sp Qtrs. 5 cl. H202 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 210. BER/GEC/LAR course. SS Admis Cond course.

**294 Group Studies U 2-5**

Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

**300 Human Origins U 5**

The search for human origins through a reconstruction of the human and non-human primate fossil records of the last 60 million years; emphasis on human skeletal, behavioral, and social patterns. Poirier.

Au, Wi, Sp Qtrs. 2-2-hr, 1 1-hr cl. Prereq: 200 or permission of instructor. Not open to students with credit for 530.

**301 Modern Human Physical Variation U 5**

Survey of modern human biological diversity; examination of the underlying evolutionary and adaptational mechanisms responsible; exploration of the interplay between biology and behavior in adaptation. Crews.

Au, Wi, Sp Qtrs. 2 2-hr cl, 1 hr arr. Prereq: 200 or permission of instructor. Not open to students with credit for 535.

**350 Prehistoric Indians of the Ohio Valley U 5**

The archaeology and cultural history of the Ohio Valley from the first human settlement to European colonization, emphasizing the Adena, Hopewell, and Ft Ancient traditions. Yerkes.

Sp Qtr. 3 cl, 3 weekend field trips. Prereq: 201 or permission of instructor.

**401 Fundamentals of Archaeology U 5**

Introduction to basic archaeological theory and practice including fundamental field and laboratory; principles of survey, excavation, chronological analysis, typology, and palaeoethnography. Dancey, Gremillion, and Yerkes.

Au Qtr. 4 cl, 1 1-hr lab. Prereq: 201 or permission of instructor.

**402 Physical Anthropology of Selected World Regions U 5**

Description and analysis of simple and complex hereditary characteristics in order to evaluate origin adaptations and affinities of populations in a world region.

5 cl or 2 2-hr cl. Prereq: 200 or permission of instructor.

**402.01 North American Indians****402.02 Polynesia and the South Pacific**

Prehistory of Polynesia and South Pacific; development of ethnic and biological variation, associated cultural adaptations, and development of nutritional, infectious, and chronic disease patterns. Crews.

Wi Qtr.

**421 Regional Survey Course in Cultural Anthropology U 5**

A survey of the cultures of selected regions.

Au, Wi, Sp Qtrs. 5 cl.

**421.01 China**

A general survey of the traditional Chinese culture and society; family, kinship, and socio-political organizations; their transformations during the last century. Chen.

Not open to students with credit for 414. BER/LAC/LAR course.

**421.02 Southeast Asia**

Survey of the peoples of the region and their cultures; prehistoric origins; diversity and similarity; processes of modernization. Walker.

5 cl. Not open to students with credit for 414.

**421.03 Traditional Africa**

Traditional cultures of Africa south of the Sahara; distribution of physical types; languages; cultural areas; West Coast kingdoms as a source of the American blacks. Arewa.

BER/LAR course.

**421.04 Changing Societies in Africa**

Study of the ways in which the retention of established customs and the acceptance of innovation have interacted in selected spheres of life in contemporary Africa. Arewa.

**421.06 Ireland**

An examination of Irish prehistory and history and of Irish peasant culture and its influence on contemporary esthetics and its diffusion to the Americas.

Prereq: 202 or equiv or permission of instructor. Not open to students with credit for 620.09.

**421.08 Indians of North America**

Development of culture change in North American Indians. Zaharlick.

Not open to students with credit for 412. BER/GEC/LAR course.

**421.09 Japan**

A general survey of traditional Japanese culture and society: family, kinship, values, religion, and politics; recent changes during modernization. Moore.

Prereq: 202 or equiv or permission of instructor.

**421.10 India**

A survey of Indian society and culture: family, kinship, caste, political and economic life, religions, and worldviews; the rural-urban continuum. Walker.

Sp Qtr. Prereq: 202 or equiv or permission of instructor.

**421.11 Korea**

An anthropological survey of traditional and contemporary Korean culture and society with emphasis on kinship, community organization, social structure, modernization, and economic development.

Sp Qtr. 5 cl. Prereq: 202 or equiv.

**520 Socio-Cultural Dimensions of Japanese Business U G 5**

An exploration of features of Japanese culture and society and how they are manifested in the world of Japanese business. Moore.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 202 or permission of instructor.

# **525 History of Anthropological Theory U G 5**

Major theoretical viewpoints in anthropology seen in their historical context. Moore and Walker.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 202 or permission of instructor.

# **552 Old World Prehistory U G 5**

Detailed examination of topics of special interest in current prehistoric research.

Au, Wi, Sp Qtrs. 4 or 5 cl. Prereq: 201 or equiv or written permission of instructor. Not open to students with credit for 551.03 or 551.04.

## **552.01 The Old Stone Age**

Palaeolithic in Africa, Asia, and Europe; current theory, research, and problems regarding our understanding of the early hunting-gathering way of life.

Au Qtr.

# **553 New World Prehistory U G 5**

Detailed surveys of native American prehistory in select regions from the earliest evidence of occupation to the intrusion of Old World populations.

Au, Wi, Sp Qtrs. Prereq: 201.

## **553.01 Aztecs, Maya, and their Predecessors**

The archaeology and cultural history of Mexico and Guatemala with emphasis on agricultural origins and the development of complex society. Dancey.

Au Qtr. 4 cl. Not open to students with credit for 551.02.

## **553.02 Prehistoric Indians of Eastern North America**

Survey of the archaeology and cultural history of North America east of the Rocky Mountains. Gremillion and Yerkes.

Sp Qtr. 4 cl. Not open to students with credit for 550, 551, or 551.01.

## **553.03 Prehistoric Indians of Western North America**

Survey of the archaeology and culture of North America north of Mexico and west of the Rocky Mountains, including the American Southwest. Dancey.

Wi Qtr. 4 cl. Not open to students with credit for 550, 551, or 551.01.

# **565 Archaeological Training Expedition U 8-16**

Survey and excavation of prehistoric archaeological sites; trains students in methods and techniques of archaeological field research. Dancey and Yerkes.

Su Qtr. 8 or hrs for either term. Full time in expedition camp. Prereq: 401 or equiv and written permission of instructor. Not open to students with credit for 664.

# **597 Issues of the Contemporary World U 5**

Prereq: Sr standing. GEC/LAR courses.

## **597.01 Cultural Conflict in Developing Nations**

Analysis of cultural conflict in developing nations resulting from rapid and extensive technological and social change. Chen and Moore.

Au, Sp Qtrs. 5 cl. Not open to students with credit for 450.

## **597.02 Women, Culture, and Development**

An analysis of the dramatic changes occurring in women's lives in response to development and modernization; developing and developed countries contrasted.

Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 460.

# **601 Medical Anthropology U G 5**

Biocultural and sociocultural aspects of health in modern and prehistoric populations.

Au, Wi, Sp Qtrs. 5 cl.

## **601.01 Biosocial Aspects of Health**

Biomedical and biosocial influences on problems of human health throughout the world, focusing upon the evolutionary implications of those problems.

## **601.03 Biocultural Adaptations in Prehistory**

Effects of culture and biology on adaptations and the evolution of prehistoric populations. Scullin.

# **602 Special Topics in Archaeology U G 5**

Detailed examination of select topics concerning the recovery and analysis of archaeological data.

Prereq: 401.

## **602.01 Strategy of Archaeological Field Research**

Design of archaeological data recovery programs and their implementation through survey, excavation, and other methods. Dancey.

Sp Qtr. 5 cl, 3 field trips arr. Not open to students with credit for 555, 556, or 556.02.

## **602.02 Archaeological Laboratory Methods**

Practical experience in the laboratory analysis of archaeological materials with emphasis on stone, bone, and ceramic artifacts; preparation of reports on analytical procedures and results. Dancey, Gremillion, and Yerkes.

Wi Qtr. 5 cl, 6 lab hrs.

# **602.03 Environmental Archaeology**

A survey of the principles, methods, and techniques of prehistoric environmental analysis; emphasis on understanding Pleistocene and Holocene environments as they relate to archaeology. Yerkes.

Au Qtr. 5 cl.

# **620 Special Topics in Cultural Anthropology U G 5**

Detailed examination of topics of special interest in contemporary cultural anthropology.

Prereq: 202 or equiv or permission of instructor.

## **620.02 The Anthropology of Women**

5 cl.

## **620.03 Peasant Society and Culture**

5 cl.

## **620.05 Cultural Ecology**

5 cl.

## **620.06 Folkloristic Anthropology**

5 cl.

## **620.07 Anthropology of Education**

5 cl.

## **620.08 The Anthropology of Sex**

Primate sexual behavior; sex and the origins of society and culture; sexual maturation and enculturation; cross-cultural sexuality; sex in art and folklore; sex research.

5 cl. Sp Qtr.

## **620.11 Anthropology of Religion**

World views in tribal and peasant cultures with an emphasis on religion; integration of religion with other aspects of culture.

Not open to students with credit for 515.

## **620.12 Psychological Anthropology**

Anthropological contributions to the field of social psychology; variations in personality as associated with variations in culture; the range of personality differences within various cultures.

5 cl. Not open to students with credit for 600.

## **620.13 Tribal Society and Culture**

Forms of social organization in simpler societies; dynamics of social relations in such societies; a comparison of simpler forms of social structure with complex forms. Walker.

5 cl. Sp Qtr. Not open to students with credit for 505.

## **620.14 Anthropology of the Arts**

Anthropological perspectives on expressive culture: art, music, dance, etc., in tribal and peasant cultures.

5 cl. Not open to students with credit for 400.

## **620.15 Economic Anthropology**

An analysis of economic rationality in non-market and market societies; resource allocation, work organization, product disposition, exchange, money, trade, and development.

Sp Qtr.

## **620.16 Japanese Minorities**

Japanese minorities: Ainu, Koreans, outcasts, and other groups; social organization, ethnic identity, Japanese perceptions, cultural conflict. Moore.

Sp Qtr. 2 2-hr cl or 4 1-hr cl.

## **620.17 East Asian Women**

Cross-cultural perspectives on the status and roles of Chinese, Japanese, and Korean women in various social settings, including the family, work places, and national economy.

Sp Qtr. 2 2-hr cl. Prereq: 202 or equiv.

# **626 Urban Anthropology U G 5**

An examination of urban life and the variety of the urban experience around the world; and the nature of anthropological research in cities.

Sp Qtr. 5 cl. Prereq: 202 or permission of instructor. Not open to students with credit for 620.04.

# **630 Language and Culture in Education U G 5**

Examination of the problems of educating children of diverse cultural and linguistic backgrounds in the U.S. school system. Zaharlick.

Au, Wi, Sp Qtrs. 4 cl. Prereq: 202 or equiv or grad standing.

# **640 Special Topics in Physical Anthropology U G 5**

Topics of current concern to physical anthropologists. Crews, Poirier, and Scullin.

Au, Wi Qtrs. 5 cl. Prereq: 200 or equiv or permission of instructor.

## **640.01 Monkeys, Apes, and Humans (Primate Behavior)**

## **640.02 Growth and Development**

## **640.03 Dental Anthropology**

## **640.04 Forensic Anthropology**

An introduction to the application of physical anthropology theory and methods for forensic purposes.

Sp Qtr. 2 2½-hr cl.

**656 Issues in Archaeological Theory U G 5**

Examination of the assumptions and concepts underlying analysis of archaeological data; methods of reconstructing cultural history, past lifeways, and explaining cultural change. Dancy.

Wi Qtr. 4 cl. Prereq: 401. Not open to students with credit for 556.01.

**675 Introduction to Anthropological Linguistics U G 5**

Relations of language to social organization, world view, socialization, and cultural analysis. Zaharlick.

Wi Qtr. 5 cl. Prereq: 10 cr hrs in anthrop or permission of instructor. Not open to students with credit for 575.

**685 Summer Field School in Archaeology U G 3-12**

Practical experience in archaeological fieldwork including site survey, excavation, surveying and mapping, preservation, and other related methods and techniques of data recovery. Dancy and Yerkes.

Su Qtr. Full time in expedition camp. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Field school is conducted at a site within commuting distance of the Columbus campus.

**693 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: 30 cr hrs in anthrop or written permission of instructor. Repeatable to a maximum of 20 cr hrs, not more than 4 in any one decimal subdivision. These courses are graded S/U.

**693.01 Theory****693.02 History****693.03 Anthropological Linguistics****693.04 Research Methodology****693.05 Prehistory****693.06 Ethnography****693.07 Physical Anthropology****694 Group Studies U G 2-15**

Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701 Advanced Topics in Physical Anthropology U G 5**

Discussion of advanced topics in human variation and hominid evolution; emphasis on critical analysis and evolution of theoretical topics in research design.

2 2-hr cl, 1 hr arr. Prereq: Permission of instructor.

**701.01 Modern Human Physical Variation**

The racial classification of humans on a biological basis; the evolution of Homo sapiens and the development of human variability; racial differences and mixtures. Crews.

Not open to students with credit for 535 or 803.04.

**701.02 Hominid Paleoanthropology**

A comprehensive study of the fossil hominids; fossils of Homo sapiens and their relation to other fossil hominids. Poirier.

**702 Theories in Cultural Anthropology U G 5**

Major theoretical orientations in cultural anthropology; the developmental histories of the major theoretical schools and examination of their respective philosophical foundations. Arewa.

Au Qtr. 2 2-hr cl, arr time. Not open to students with credit for 803.01 or 803.02.

**703 Culture and Language U G 5**

Development and range of anthropological concerns with language; emphasis on utility of linguistic approaches, methods, and theories to other subdisciplines of anthropology. Zaharlick.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 675 or Linguist 601, or equiv and permission of instructor.

**710 Field Methods in the Study of Culture U G 5**

Theoretical and practical preparation for the field study of cultures.

Au, Wi Qtrs. 2 2-hr cl, arr time. Prereq: Permission of instructor. Not open to students with credit for 810G.

**H783 Honors Research U 3-5**

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the anthrop courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in anthrop. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**801 Seminars in World Prehistory G 5**

Au, Wi, Sp Qtrs. Prereq: Admission to grad program.

**801.01 Archaeology of Hunter-Gatherer Societies**

Advanced study of hunter-gatherer band society from theoretical, ethnographic, and archaeological perspectives. Yerkes.

**801.02 Origins of Food Production and Complex Societies**

Advanced theoretical and comparative study of the origins of food production and the rise of complex societies in major New World and Old World centers. Gremillion.

Not open to students with credit for 803.07.

**805 Seminars in Ethnology G 3-5**

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable to a maximum of 45 cr hrs, not more than 10 of which shall be in any one of the following topics.

A— North America

D— East Asia

F— South Asia

K— Caribbean

L— Africa

P— Southeast Asia: Kinship Marriage and Family

Q— Southeast Asia: Religious Systems and World Views

R— Asian Anthropology and Anthropologists: Theoretical Perspectives

**810 Seminars in Cultural Anthropology G 3-5**

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable to a maximum of 45 cr hrs, not more than 10 of which shall be in any one of the following topics.

A— Nature of Culture

D— Enculturation

E— Social Organization

F— Religious Behavior

G— Acculturation, Change, and Stability

I— Peasant Cultures

J— Cultural Evolution

K— Human Ecology

L— Anthropology of Political Systems

P— Anthropology of Education

Q— Study Design and Data Analysis

R— Theory and Problems in Cultural Anthropology

T— Experiments in Anthropological Fieldwork: Realism and Reflexivity

U— Ethnographic Field Experience

V— Women

X— Political Economy of Development and Underdevelopment

Y— Revolution and Revitalization Movements

Z— Ethnopsychiatry

**820 Seminars in Physical Anthropology G 3-5**

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable to a maximum of 30 cr hrs, not more than 10 of which shall be in any one of the following topics.

A— Evolutionary Theory

D— Field and Laboratory Methods

E— Fossil Hominids

F— Non-Human Primate Behavior

G— Population Genetics

I— Biocultural Adaptation

J— Primate Anatomy

K— Biomedical Anthropology

L— Field Methods in Primate Behavior

M— Field Methods in Primate Behavior

N— Special Topics

P— Human Growth and Development

Q— Special Topics

R— Quantitative Methods

**830 Seminars in Prehistory G 3-5**

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Repeatable to a maximum of 30 cr hrs, not more than 10 of which shall be in any one of the following topics.

A— Method and Theory

D— Archaeology of High Civilizations

E— Special Problems in Archaeology

F— Old World History

G— North American Archaeology

**993 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. 2 conf hrs. Repeatable to a maximum of 20 cr hrs, not more than 10 of which shall be in any one of the following topics. This course is graded S/U.

A— Theory

B— History



- C— Anthropological Linguistics
- D— Research Methods
- E— Prehistory
- F— Ethnology
- G— Physical Anthropology
- I— Unclassified
- J— Cultural Anthropology

### 998 Research in Anthropology: Thesis G Arr

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

### 999 Research in Anthropology: Dissertation G Arr

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Arabic

256 Cunz Hall, 1841 Millikin Road, 292-9255

### 101 Elementary Modern Standard Arabic I

Developing the ability to use Arabic functionally and communicatively in context; intensive oral interaction with instructor and fellow students; the basics of the writing system.

Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR courses. FL Admis Cond courses.

#### 101.01 Classroom Track U 5

5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

#### 101.51 Individualized Track U 1-5

Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs in 101.03.

### 102 Elementary Modern Standard Arabic II

Developing further language ability through learning how to perform certain functions orally and using them with fellow students; reading and writing passages reflecting their abilities.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses. FL Admis Cond courses.

#### 102.01 Classroom Track U 5

Au, Wi, Sp Qtrs. Prereq: 101.01 or 5 cr hrs of 101.03 or 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

#### 102.51 Individualized Track U 1-5

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 101.01, or 5 cr hrs of 101.03 or 101.51, or permission of instructor. Students may register for 101.51 or 102.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs in 102.03.

### 103 Elementary Modern Standard Arabic III

Further language functions requiring the use of more complex structures; intensive oral interaction with instructor and fellow students; reading practice in and out of class.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

#### 103.01 Classroom Track U 5

Au, Wi, Sp Qtrs. 5 cl. Prereq: 102.01, or 5 cr hrs of 102.03 or 102.51, or 110. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

#### 103.51 Individualized Track U 1-5

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 102.01, or 5 cr hrs in 102.03 or 102.51, or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs in 103.03.

### 104 Intermediate Modern Standard Arabic I

Building on previously acquired functional abilities; using Arabic to express opinion and feelings; oral interaction in the classroom; reading authentic texts of various genres.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

#### 104.01 Classroom Track U 5

Au, Wi, Sp Qtrs. 5 cl. Prereq: 103 or 112. Not open to students with credit for 602. This course is available for EM credit.

### 104.51 Individualized Track U 1-5

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 103.01, or 5 cr hrs in 103.03 or 103.51, or permission of instructor. Students complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with 80% proficiency required for advancement.

### 151 Basic Colloquial Arabic I

Introduction to phonology and grammar of the spoken language of educated urbanites of the Eastern Arab world.

Su Qtr. Not open to students with credit for 106 or 151 or 201. Does not satisfy ASC foreign language requirement.

#### 151.01 Classroom Track U 5

5 cl.

#### 151.51 Individualized Track U 1-5

Arr. Prereq: Written permission of instructor.

### 152 Basic Colloquial Arabic II U 5

Continuation of 151; analysis of and drill in morphological and syntactic patterns; expansion of vocabulary; practice in conversation.

Wi Qtr. 5 cl. Prereq: 151 or permission of instructor. Not open to students with credit for 107 or 202. Does not satisfy ASC foreign language requirement.

### 205 Intermediate Modern Standard Arabic II

Initiating and sustaining communication; reading and understanding short authentic passages; and writing to express many language functions.

#### 205.01 Classroom Track U 5

Au, Wi, Sp Qtrs. 5 cl. Prereq: 104.01 or 5 cr hrs of 104.51. Students must register for and complete 5 cr hrs during the qtr.

#### 205.51 Individualized Track U 1-5

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 104.01, or 5 cr hrs of 104.51, or permission of instructor. Students register for and complete 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

### 241 Culture of the Contemporary Arab World U 5

A general survey and examination of the socio-cultural structure of the modern Arab world.

Su, Au, Wi, Sp Qtrs. 5 cl. H241 (honors) may be available to students enrolled in an honors program or by permission of dept. Taught in English. BER/GEC/LAR course.

### Masterpieces of Near Eastern Literature in Translation

See NUH 272.

### 253 Intermediate Colloquial Arabic U 5

Intensive practice in speaking Arabic with emphasis on various cultural aspects of Arab life.

Sp Qtr. 5 cl. Prereq: 152 or permission of instructor. Does not satisfy ASC foreign language requirement. Not open to students with credit for 153.

### 293 Individual Studies U 1-15

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

### 294 Group Studies U 1-15

Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.

### 371 Classical and Medieval Arabic Literature in Translation U 5

Reading and analysis of major works of Arabic literature from the 5th to the 17th centuries including classical poetry, the Qur'an, and the Arabian Nights.

Wi Qtr. 5 cl. Not open to students with credit for 271 and 272. BER/GEC/LAR course.

### 372 Modern Arabic Literature in Translation U 5

Reading and analysis of representative works of the 19th and 20th centuries; discussion of development of major movements and genres in modern Arabic literature.

Au Qtr. 5 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for 273. BER/GEC/LAR course.

### 400 Arabic Grammar U 5

5 cl.

#### 400.01 Arabic Grammar I

Accelerated introduction to the structure of modern standard and classical Arabic: phonology, morphology, and syntax, with emphasis on development of reading comprehension skills.

Wi Qtr. Prereq: 104. Not open to students with credit for 402.

**400.02 Arabic Grammar II**

Continuation of 400.01 with emphasis on the grammatical analysis and comprehension of authentic texts selected from different periods and genres.

Sp Qtr. Prereq: 400.01 or permission of instructor.

**401 Intermediate Literary Arabic Reading U 5**

Developing reading skills through reading adapted and authentic Arabic texts; selections reflect cultural and literary aspects of Arab-Islamic civilization.

Au Qtr. 5 cl. Prereq: 205 or permission of instructor.

**403 Intermediate Arabic Conversation and Composition U 5**

Practice in aural comprehension, conversation, and controlled compositions on various aspects of Arabic culture.

Sp Qtr. 5 cl. Prereq: 205. Not open to students with credit for 604.

**603 Advanced Arabic Conversation and Composition U G 5**

Intensive practice in speaking and writing Arabic at an advanced level based on contemporary literary usage; conducted entirely in Arabic.

Wi Qtr. 5 cl. Prereq: 403 or permission of instructor. Not open to students with credit for 601.

**610 Introduction to Arabic Linguistics U G 5**

An introduction to the structure of the Arabic language, both spoken and written.

Wi Qtr. 5 cl. Prereq: 103 or 152, and Linguist 601, or permission of instructor.

**611 History of the Arabic Language U G 5**

Survey of the evolution of the Arabic language in its cultural and historical setting.

Wi Qtr. 5 cl. Prereq: Permission of instructor. GEC/LAR course.

**626 Introduction to the Qur'an U G 5**

A linguistic, literary, and cultural analysis of selected chapters from the Qur'an.

Au Qtr. 5 cl. Prereq: 403.

**627 Classical Arabic Poetry U G 5**

Selected readings from classical and medieval Arabic poetry; Arabic metrics and literary theory.

Sp Qtr. 5 cl. Prereq: 403.

**628 Classical Arabic Prose U G 5**

Selected readings reflecting the evolution of Arabic prose literature from its origins to the late Abbasid period.

Wi Qtr. 5 cl. Prereq: 403.

**651 Contemporary Arabic Prose Fiction U G 5**

Reading and analysis of short stories and novels representative of major developments and trends of the 20th century.

Au Qtr. 5 cl. Prereq: 403. Not open to students with credit for 622 or 625.

**652 Contemporary Arabic Poetry and Drama U G 5**

Reading and analysis of plays and poems representative of major developments and trends of the 20th century.

Sp Qtr. 5 cl. Prereq: 403. Not open to students with credit for 623 or 624.

**671 The Qur'an in Translation U G 5**

An introduction, in English, to the literary, religious, and cultural implications of the fundamental Book of Arabic literature and of Islamic civilization.

Au Qtr. 5 cl.

**672 Arabic Folk Narrative in Translation U G 5**

Literary and cultural aspects of *1001 Nights* and other popular narratives (epics, legends, folktales) in the Arab world.

Sp Qtr. 2-2-hr cl.

**680 Basic Bibliographic and Reference Tools in Arabic and Islamic Studies U G 5**

Sp Qtr. 5 cl. Prereq: 10 or hrs in Middle Eastern history or literature or equiv.

**692 Workshop U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su Qtr. Arr. Prereq: Teaching experience and written permission of workshop director.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**710 Studies in Arabic Linguistics U G 5**

Advanced analytical study of synchronic, diachronic, sociolinguistic, and dialectal topics and problems.

Su, Au, Wi, Sp Qtrs. 2-2-hr cl. Prereq: 610 or 611 or permission of instructor. Repeatable to a maximum of 20 or hrs.

**721 Studies in Arabic Poetry U G 5**

Advanced study of specific poetic periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials.

Su, Au, Wi, Sp Qtrs. 4 or 5 cl. Prereq: 10 or hrs of Arabic literature at the 600 level or equiv. Repeatable to a maximum of 15 or hrs.

**722 Studies in Arabic Prose U G 5**

Advanced study of specific periods, authors and/or genres of prose writing (literary or non-literary) involving extensive reading and discussion of primary and secondary materials.

Su, Au, Wi, Sp Qtrs. 4 or 5 cl. Prereq: 10 or hrs of Arabic literature at the 600 level or equiv. Repeatable to a maximum of 20 or hrs.

**H783 Honors Research U 3-5**

Offers undergraduates with special aptitudes a greater opportunity to do independent study and research than is possible in normal course work.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the Arabic courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 or hrs. At least 2 qtrs are required of candidates for the degree BA with distinction in Arabic. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**801 Teaching Arabic at the College Level G 5**

Methods and techniques for the teaching of Arabic at the college level.

Au Qtr. 2-wk intensive workshop followed by 1 2-hr cl weekly. Prereq: TA in NJH or permission of instructor. For students enrolled in this course, the minimum number of hrs required for graduation is increased by 5 or hrs.

**811 Seminar in Arabic Studies G 5**

Intensive investigation of a selected topic or problem in Arabic linguistics, philology, literature, or literary culture.

Su, Au, Wi, Sp Qtrs. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 20 or hrs. Preparation of major research paper is required.

**998 Research in Arabic G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Architecture

189 Brown Hall, 190 West 17th Avenue, 292-5567

**200 Outlines of Architecture U 3**

Introduction to architecture; emphasis upon the nature of the art/science of architecture and its physical and cultural context.

Su, Au, Wi, Sp Qtrs. 3 cl. H200 (honors) may be available to students enrolled in an honors program. Required for students intending to major in arch. VPA Admis Cond course.

**201 Introduction to Architectural History U 3**

Introduction to architecture, emphasis on three-dimensional qualities of complex architectural form and space as determined by cultural history.

Au, Wi, Sp Qtrs. 3 cl. VPA Admis Cond course. Not open to 3rd and 4th year arch students.

**202 Introduction to Basic Design in Architecture U 5**

An introduction to basic design problem solving; concepts of point, line, plane, and space organization; principles of unity/variety, order, balance, proportion, scale, etc.; orthographic projection and axonometrics; pattern diagramming; and basic design consequences of human activity.

Su, Au, Wi, Sp Qtrs. 1 cl, 6 lab hrs. VPA Admis Cond course.

**241 Architectural Design I U 6**

Studio introduction to architectural design problem solving; concepts of architectural aesthetic principles; value drawing techniques; model building; anthropometrics; and human gathering and circulation patterns.

Au Qtr. 3 cl, 9 lab hrs. Prereq: 200 and 202; Math 150 and 117 or equiv; Physics 111 and 112 or equiv and submission of portfolio. Only open to students enrolled in AHR, who have completed the math, physics, and AHR prerequisites with a 2.15 CPHR; have earned a 2.15 CPHR with at least 45 earned hrs; or permission of the undergraduate committee.

**242 Architectural Design II U 6**

Studio focusing upon elementary diagramming and analysis of human needs; concepts of color theory; natural lighting; historical design precedents; and horizontal and vertical movement systems.

Wi Qtr. 3 cl, 9 lab hrs. Prereq: 241 and 271. Open only to students enrolled in arch.

**243 Architectural Design III U 6**

Studio focusing upon elementary architectural programming; concepts relating human use to architectural form, space, symbol and site; site analysis; functional diagrams, matrices and charts; barrier-free design and 19- and 20th-century design precedents.

Sp Qtr. 3 cl, 9 lab hrs. Prereq: 242. Open only to students enrolled in arch.

**271 Architectural Graphics: Freehand Drawing for Architects U 3**

Fundamental freehand drawing principles necessary to the investigation, visualization, and presentation of architectural design ideas.

Au Qtr. 1 cl, 5 lab hrs. Concur: 241.

**272 Architectural Graphics: Constructed 3-D Drawings U 3**

Study and application of graphic theory and techniques such as axonometrics, perspectives, and shades and shadows.

Wi Qtr. 1 cl, 5 lab hrs. Prereq: 271 or permission of instructor.

**273 Architectural Presentation Techniques U 3**

Study and application of architectural presentation techniques in pencil, ink, and other media.

Sp Qtr. 1 cl, 5 lab hrs. Prereq: 272 or permission of instructor.

**293 Individual Studies in Architecture U 1-5**

Designed for students who desire to pursue, individually, special studies in the discipline.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies in Architecture U 1-5**

Designed for students who desire to pursue, in a group, special studies in the discipline.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs.

**301 History of Ancient Architecture U 3**

Survey of history of architecture of Mesopotamia, Egypt, Greece and Rome; includes historical inquiry, physical and cultural influences, theories, and analysis techniques.

Au Qtr. 3 cl. H301 (honors) may be available to students enrolled in an honors program. Open to majors and non-majors.

**302 History of Medieval Architecture U 3**

Survey of history of architecture of Early Christian, Byzantine, Romanesque, and Gothic periods; includes physical and cultural influences, historical inquiry, theories, and analysis techniques.

Wi Qtr. 3 cl. H302 (honors) may be available to students enrolled in an honors program. Open to majors and non-majors.

**303 History of Renaissance and Baroque Architecture U 3**

Survey of history of architecture of Renaissance, Mannerist, and Baroque periods; includes historical inquiry, physical and cultural influences, theories, and analysis techniques.

Sp Qtr. 3 cl. H303 (honors) may be available to students enrolled in an honors program. Open to majors and non-majors.

**304 History of Enlightenment and 19th-Century Architecture U 3**

Survey of history of Enlightenment and 19th-Century architecture; includes historical inquiry, physical and cultural influences, theories, and analysis techniques.

Au Qtr. 3 cl. H304 (honors) may be available to students enrolled in an honors program. Open to majors and non-majors.

**305 History of Modern Architecture U 3**

Survey of history of modern architecture, includes historical inquiry, physical, and cultural influences, theories, and analysis techniques.

Wi Qtr. 3 cl. H305 (honors) may be available to students enrolled in an honors program. Open to majors and non-majors.

**309 Evolution of the Architectural English Environment U 3**

Survey of the development of the English architecture in response to the physical characteristics of the island and the changing social, political, and economic context.

Sp Qtr. 3 cl. Open to majors and non-majors.

**326 Introduction to Building Construction U 3**

Introduction to construction materials and building systems; survey of building industry and its relation to architectural practice.

Au Qtr. 3 cl, 2 hrs lab. Prereq: Jr standing or permission of instructor.

**327 Building Construction I U 3**

Detailing of building sections, simple enclosures and structural assemblies emphasizing wood and steel construction.

Wi Qtr. 3 cl, 2 hrs lab. Prereq: 326.

**328 Building Construction II U 3**

Detailing of building sections, simple enclosures, and structural assemblies emphasizing masonry and concrete construction.

Sp Qtr. 3 cl, 2 hrs lab. Prereq: 327.

**341 Architectural Design IV U 6**

Studio focusing upon analysis of historical and contemporary building types, graphic and verbal architectural analysis, and programmatic diagrams, matrices, etc.; human behavioral influences on architecture.

Au Qtr. 2 cl, 10 lab hrs. Prereq: 243. Open only to students enrolled in arch.

**342 Architectural Design V U 6**

Studio focusing upon relationship of wood and masonry material and construction to architectural design; introduction to building codes; bearing wall and post and beam structural systems.

Wi Qtr. 2 cl, 10 lab hrs. Prereq: 341. Open only to students enrolled in arch.

**343 Architectural Design VI U 6**

Studio focusing upon relationship of steel and concrete materials and construction to architectural design; introduction to zoning codes; skeletal and rigid frame structural systems.

Sp Qtr. 2 cl, 10 lab hrs. Prereq: 342. Open only to students enrolled in arch.

**371 Computer Graphics for Architectural Design U 3**

Introduction to computer-aided architectural design for studio uses; theory of architectural modeling and application using commercially available software.

Au, Wi, Sp Qtrs. 1 2-hr cl, 1 2-hr lab. Prereq: Admission to School of Architecture Program. Not open to students with credit for 294A.

**401 Survey of Architectural Theory U 3**

Survey of architectural theory which reviews the history of architecture while searching for reinterpretations, strategies, structures, and precedents for theory in Western intellectual history.

Sp Qtr. 3 cl. Prereq: 301, 302, 303, 304, and 305. Not open to students with credit for 673.

**403 Senior Seminar U 3**

Study of architecture in terms of its broader cultural, political, geographic, economic, and/or social context; third writing course.

Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Second writing course and 4th yr standing in arch; or permission of instructor. H403 (honors) may be available to students enrolled in an honors program or by permission of instructor. GEC course.

**426 Introduction to Architectural Structures U 4**

Survey of statics and strength of materials; survey of structural systems with emphasis on integrated structural behavior and selection of the best structural system.

Au Qtr. 4 cl. Prereq: Physics 111. BER/LAR/GEC course.

**427 Wood and Steel Structure U 3**

Principles, elements, computations, detailing, and connections for structural wood and steel.

Wi Qtr. 3 cl. Prereq: 426.

**428 Masonry and Concrete Structure U 3**

Principles, elements, computations, detailing, and connections for structural masonry and concrete.

Sp Qtr. 3 cl. Prereq: 427.

**441 Architectural Design VII U 6**

Studio focusing upon the relationship of buildings and site; site analysis; alternative energy and passive solar design; computer-aided design.

Au Qtr. 1 cl, 11 lab hrs. Prereq: 343. Open only to students enrolled in arch.

**442 Architectural Design VIII U 6**

Studio focusing upon application of human behavioral analysis techniques to architectural design; programming; post occupancy evaluation.

Wi Qtr. 1 cl, 11 lab hrs. Prereq: 441 or permission of Undergrad Committee. Open only to students enrolled in arch.

**443 Architectural Design IX U 6**

Studio focusing upon relationship of mechanical systems, life cycle costing, value engineering and project financial feasibility to architectural design.

Sp Qtr. 1 cl, 11 lab hrs. Prereq: 442 or permission of the Undergrad Committee. Open only to students enrolled in arch.

**H444 Special Honors Design Studies U 6**

Studio for group and/or individual design studies.

Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing in arch with a minimum cumulative pt-hr ratio of 3.20, permission of instructor and Dept Honors Committee. Accepted students may substitute this course for 441, 442, or 443.

**604 History and Preservation of 19th- and 20th-Century American Architecture U G 3**

Investigation of 19th- and 20th-century American architecture with emphasis upon issues of preservation and conservation.

Au Qtr. 3 cl. Prereq: Grad standing or 4th yr standing in arch or permission of instructor.

**605 Research Methods in Architectural History and Preservation U G 3**

A survey of literary and physical research techniques in architectural history and preservation; identification and recording of historic buildings; field work in inventory techniques.

Sp Qtr. 3 cl. Prereq: Grad standing or 4th yr standing in arch or permission of instructor.

**606 Architectural Preservation: Administration and Practice U G 3**

An outline of regulations, laws, economic incentives, funding sources, and technical/design guidelines as they affect architectural preservation.

Wi Qtr. 3 cl. Prereq: 4th yr standing or grad standing in arch or permission of instructor.

**641 Accelerated Architectural Design I U G 5**

Architectural analysis and problem solving for students in the 3+ Architecture Graduate Program.

Au Qtr. Prereq: Admission to the 3+ Master of Architecture Program.

**642 Accelerated Architectural Design II U G 5**

Continuation of 641.

Wi Qtr. Prereq: 641. Open only to students in the 3+ Master of Architecture Graduate Program.

**643 Accelerated Architectural Design III U G 5**

Continuation of 642.

Sp Qtr. Prereq: 642. Open only to students in the 3+ Master of Architecture Graduate Program.

**653 Passive Solar Energy I U G 3**

Investigation of the current development of energy conservation aspects in a building design in relation to passive solar energy.

Au Qtr. 3 cl. Prereq: 4th yr or grad standing in arch or permission of instructor.

**654 Passive Solar Energy II U G 3**

Study of energy evaluation of various types of passive solar energy systems and their applications in energy conservation in a building design.

Wi Qtr. 2 2 1/2-hr cl. Prereq: 653 and arch major.

**660 Computer-Aided Architectural Design and Graphics U G 4**

Usage and development of computer graphics techniques in two and three dimensions as they apply to architectural drafting and design.

**660.01 Two-Dimensional Computer-Aided Architectural Design and Graphics**

Two dimensional vector graphics oriented programming with emphasis on parameterization techniques and transformational operators applicable to architectural design and drafting.

Au Qtr. 2 2-hr cl. Prereq: 294A or 371 or En Graph 294A or enrollment in grad program or permission of instructor.

**660.02 Three-Dimensional Computer-Aided Architectural Design and Graphics**

Three dimensional graphics oriented programming with emphasis on parameterization/transformations as they apply to derivation and perspective drafting of architectural compositions.

Wi Qtr. 2 2-hr cl. Prereq: 660.01 or equiv and permission of instructor.

**660.03 Integrated Computer Aids for Architectural Design**

Color graphics and texture, sculpting operators, spatial grammars, and data structures as they apply to architectural design.

Sp Qtr. 2 2-hr cl. Prereq: 660.02 or equiv and permission of instructor.

**661 Architectural Environmental Systems U G 3**

Survey of building energy sources, climate and site, energy and arch design, environmental comfort, heat loss and gain, plumbing and storm water systems, lighting fundamentals, and light sources.

Au Qtr. 3 cl. Prereq: Physics 112, enrollment in Graduate School, or permission of instructor. Not open to students with credit for 461.

**662 Electrical Systems in Architecture U G 3**

Survey of daylight design, lighting design and application, principles of electricity, electrical systems and materials, service and utilization, and electric wiring design.

Wi Qtr. 3 cl. Prereq: 661 or equiv.

**663 Mechanical Systems in Architecture U G 3**

Survey of heating, cooling, and ventilation; environmental planning; climate control systems; solar energy; energy conservation; fire protection; acoustics; noise control and building signal and life-safety systems.

Sp Qtr. 3 cl. Prereq: 661.

**671 Social and Psychological Influences on Architecture U G 3**

Survey of the relationships between human-made surroundings and selected social/psychological processes basic to human functions; the application of this material to programming, design, and evaluations of settings for human use.

Au Qtr. 3 cl. Prereq: Arch 3rd yr standing or above.

**672 Economic Influences on Architecture U G 3**

Survey of economic issues and methods relevant to practice of architecture including the building delivery systems, market analysis, computation of present, future and annual worth; life cycle costing, depreciation, and tax implications.

Wi Qtr. 3 cl. Prereq: Arch 3rd yr standing or above.

**685 Field Investigations in Architectural Preservation U G 5**

Su Qtr. 3 cl, 10 hrs field lab. Prereq: Permission of dept.

**685.01 Research Techniques**

Architectural preservation research involving primary and secondary source literature and official public records, as well as physical research.

**685.02 Planning and Design**

Architectural preservation design including programming, design, and detailing in architectural restoration projects.

**685.03 Fabric Analysis and Measured Drawings**

Analysis of architectural structure and enclosure systems and preparation of measured drawings using photogrammetric techniques as well as hand measurements.

**693 Individual Studies in Architecture U G 1-5**

For students majoring in arch desiring to pursue special studies not offered in the fixed curriculum.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor and completion of dept independent study form. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies in Architecture U G 1-5**

For students majoring in arch desiring to pursue special studies not offered in the fixed curriculum.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor and completion of dept independent study form. Repeatable to a maximum of 15 cr hrs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****700 Allied Arts U G 3**

Analysis of arts related to architecture and the expression of the nature of materials in architectural ornament, furniture and furnishings, and the garden.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Arch 4th yr or grad standing in arch or permission of instructor.

**701 History of Architectural Theory U G 3**

Survey of architectural theories as stated by architects, historians, and architectural critics.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Arch 4th yr standing or permission of instructor.

**721 Architecture Acoustics U G 3**

The geometry of architectural design for good acoustics within auditoria, lecture rooms, music rooms, churches, etc., where hearing is important.

Sp Qtr. 3 cl. Prereq: Grad standing in arch or permission of instructor.

**722 Introduction to Architecture Photogrammetry U G 3**

An introduction to the geometry of central projection and to methods of gaining architectural manual data for photography.

Sp Qtr. 3 cl. Prereq: Grad standing in arch or permission of instructor.

**724 Structural Design in Architecture U G 3**

Analysis and design of structural elements and systems; emphasis on integration of structures and building design.

Au Qtr. 3 cl. Prereq: 428 or permission of instructor.

**725 History of Structures in Architecture U G 3**

Survey of structural concepts as related to the evolution of modern structural analysis, methods of construction, and architectural theory.

Wi, Sp Qtrs. 3 cl. Prereq: 428 or permission of instructor.

**751 Practice of the Design Professions I U G 3**

History of professions and their clients; the professional's interaction with society and government substantive aspects of practice, including organization and communication; legal aspects of construction.

Au Qtr. 3 cl. Prereq: Grad standing in arch or permission of instructor.

**752 Practice of the Design Professions II U G 3**

Management of construction contracts; bonds and insurance operational procedures during negotiation and construction phases; arbitration; office and project case studies.

Sp Qtr. 3 cl. Prereq: Grad standing in arch or permission of instructor.

**H783 Honors Research U 3**

Research and investigation for each student with individual conferences resulting in a proposal, objectives, bibliography, and other research.

Wi Qtr. Arr. Prereq: 4th yr standing in arch with a minimum cumulative pt-hr ratio of 3.20, permission of instructor and Dept Honors Committee. This course is graded S/U.

**H784 Honors Project U 6**

Development and promulgation of an honors project as proposed in H783.

Sp Qtr. Arr. Prereq: H783, 4th yr standing in arch with a minimum cumulative pt-hr ratio of 3.20, permission of instructor and Dept Honors Committee. Accepted students may substitute this course for 443. Completion and acceptance of the project is required for graduation with *distinction* in BS Arch.

**801 Architectural Theory: Criticism G 3**

Investigations in architectural criticism and strategies for interpreting buildings.

Au Qtr. 3 cl. Prereq: Grad standing in arch; concur: 841.

**802 Architectural Theory: Investigation of Context G 3**

Investigations of architecture and its physical context.

Wi Qtr. 3 cl. Prereq: Grad standing in arch; concur: 842.

**803 Architectural Theory Seminar G 3**

Investigations of Contemporary Architectural Theory

Prereq: 802. Repeatable to a maximum of 6 cr hrs. Students select two of the following decimal subdivisions.

**803.01 Architectural Issues I**

Au, Wi, Sp Qtrs.

**803.02 Architectural Issues II**

Au, Wi, Sp Qtrs.

**803.03 Architectural Issues III**

Au, Sp Qtrs.

**803.04 Computer-Aided Architectural Design Issues**

Au, Sp Qtrs.

**803.05 Architectural Preservation Issues**

Sp Qtr.

**803.06 Passive Solar Design Issues**

Sp Qtr.

**841 Advanced Architectural Design I G 5**

Studio focusing on coordination and integration of material presented in the undergraduate design sequence with specific implementation of a comprehensive approach to building design.

Au Qtr. 8 lab hrs. Concur: 801.

**842 Advanced Architectural Design II G 5**

Continuation of 841.

Wi Qtr. 8 lab hrs. Concur: 802.

**844 Architectural Studio Options G 5**

Creative exploration of architectural design through studios taught by distinguished visiting critics and faculty members.

Su, Au, Wi, Sp Qtrs. 8 lab hrs. Prereq: 802 and 842. Repeatable to a maximum of 20 cr hrs. Students select four of the following decimal subdivisions.

**844.01 Advanced Design I**

Au, Wi, Sp Qtrs.

**844.02 Advanced Design II**

Au, Wi, Sp Qtrs.

**844.03 Advanced Design III**

Au, Wi, Sp Qtrs.

**844.04 Computer-Aided Architectural Design**

The grade P will be assigned. A letter grade will be assigned two qtrs after completion of course.

Au, Wi, Sp Qtrs.

**844.05 Architectural Preservation Design**

Sp Qtr.

**844.06 Passive Solar Design**

Sp Qtr.

**893 Individual Studies in Architecture G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in arch, permission of instructor, and completion of dept independent study form. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies in Architecture G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in arch, permission of instructor. Repeatable to a maximum of 15 cr hrs.

**899 Interdepartmental Seminar G 1-15**

See Interdepartmental Seminars.

Su, Au, Wi, Sp Qtrs.

**999 Research in Architecture G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**Art**

146 Hopkins Hall, 128 North Oval Mall, 292-5072

**162 Concepts and Issues in Art U 2**

An orientation for new art students and a survey of art making with an emphasis on contemporary works.

Au, Sp Qtrs. 2 cl.

**170 Beginning Drawing U 5**

An introduction to basic freehand drawing, exploration of a range of drawing methods, media, concepts; emphasis on drawing from observation.

Su, Au, Wi, Sp Qtrs. 1 cl, 5 2-hr labs. This course is available for EM credit. BER/GEC/LAR course. VPA Admis Cond course.

**172 Visual Studies: Two Dimensional Art U 5**

Basic concepts of two-dimensional art dealing with visual structure, process, content, and invention.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs. This course is available for EM credit. BER/GEC/LAR course. VPA Admis Cond course.

**182 Visual Studies: Three-Dimensional Art U 5**

Basic concepts of three-dimensional art dealing with the organization of space and form, using a variety of materials, processes, tools.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs. Prereq or concur: 172. This course is available for EM credit.

**201 Introduction to Photography U 5**

Introduction to photographic theory, practice, and aesthetics through color slides and black and white image production and critique.

3 2-hr cl. Not open to students with credit for 203 or Photog 201 or 203. Students must supply 35 mm adjustable camera, color and black and white film, black and white paper, and slide carousel. BER/GEC/LAR course. VPA Admis Cond course.

**203 Photography I U 5**

First-level production course in photographic theory, aesthetics, and practice through black and white image production and critique.

Au Qtr. 2 2-hr cl, 2 2-hr labs. Prereq: Ind dsgn major or permission of instructor. Not open to students with credit for 201 or Photog 201 or 203. Students must supply adjustable 35mm camera and exposure meter, black and white film, and finishing materials. Designed for students intending to become art majors with an emphasis in photog and ind dsgn majors.

**230 Introduction to Molten Glassworking U 5**

Introduction to glass as a fluid material for artistic expression; emphasis on the development of original imagery made from molten glass.

Au, Wi, Sp Qtrs. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**231 Beginning Cold Glassworking U 5**

Exploration of contemporary possibilities for the visual imagery of preformed glass using traditional techniques as a departure point; emphasis on innovative approaches.

VPA Admis Cond course.

**240 Fundamentals of Ceramic Art U 3**

Introduction to the art phases of the ceramic field; laboratory practice in the hand forming process.

Su, Au, Wi, Sp Qtrs. 1 cl, 6 lab hrs. VPA Admis Cond course.

**242 Introduction to Ceramic Art U 3**

Introduction to the ceramic arts through the use of the potter's wheel with lectures covering a broad survey of the field of ceramics.

Su, Au, Wi, Sp Qtrs. 1 cl, 6 lab hrs. VPA Admis Cond course.

**244 Ceramic Art Studio I U 3**

Intermediate course utilizing potter's wheel as forming process.

Su, Au, Wi, Sp Qtrs. 9 lab hrs. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**245 Ceramic Art Studio II U 3**

Studio practice in designing ceramic wares with emphasis on the hand forming processes.

Au, Wi, Sp Qtrs. 3 2-hr studios, 3 hrs arr. Prereq: 244 or permission of instructor.

**246 Ceramic Art Studio III U 3**

Advance throwing and forming.

Sp Qtr. 9 lab. hrs. Prereq: 244 or permission of instructor.

**260 Visual Studies: Special Projects Laboratory U 3**

Introduction to independent investigation in the arts: research, development, and presentation of solutions.

Au, Wi, Sp Qtrs. 3 2-hr labs. Prereq: 170, 172, and 182.

**272 Beginning Life Drawing U 5**

Draw ing from the human figure; discussion of drawing as related to significant traditions; lectures and demonstrations.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 170 and 172. This course is available for EM credit.

**273 Beginning Painting U 5**

Introductory painting emphasizing fundamentals and their utilization as a basis for individual development; student initially works from still life; subsequent projects increase in complexity.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor. This course is available for EM credit.

**274 Intermediate Drawing U 5**

An intermediate level drawing-color experience exploring a variety of media and directions; lectures, discussions, demonstrations.

Au, Wi, Sp Qtrs. 5 3-hr labs. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**278 Beginning Sculpture U 5**

An introduction to the principles of sculpture, emphasizing basic forming processes and materials.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 162, 170, 172, and 182; or permission of instructor. Not open to students with credit for 180. This course is available for EM credit. VPA Admis Cond course.

**280 Construction Sculpture U 5**

Exploration of a range of technical and conceptual concerns of sculpture, using wood as a primary material.

Sp Qtr. 5 2-hr labs, 5 hrs arr. Prereq: 162, 170, 172, 182, 278; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**281 Metal Fabrication U 5**

Introduction to metal fabrication, including casting, forging, and other processes.

Au, Wi Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 162, 170, 172, 182, 278; and Hist Art 210 or 211 or 212; or permission of instructor.

**282 Life Sculpture U 5**

Aspects of the human form studied in relation to the materials of sculpture; experimentation in a choice of materials: clay, wax, cement, and plaster.

Au, Wi Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 162, 170, 172, 182, 272, and 278; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**293† Individual Studies U 2-5**

Preliminary studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. These courses are graded S/U.

**293.09 Drawing****293.10 Painting****294† Group Studies U 1-5**

Group studies for students in specialized programs.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**372 Visual Studies: Color U 5**

An introduction to seeing and using color for all disciplines; projects deal with color organization, phenomena, and interaction.

Au, Wi, Sp Qtrs. 5 2-hr labs. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**376 Beginning Relief Printmaking U 5**

Introduction to the practice and examination of several modes of artistic expression in the relief processes of printmaking.

Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**377 Beginning Serigraphy U 5**

Introduction to the practice and examination of several modes of artistic expression in the serigraphic processes of printmaking.

Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**378 Beginning Intaglio Printmaking U 5**

Introduction to practice and examination of several modes of artistic expression in the intaglio processes of printmaking.

Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**379 Beginning Lithography U 5**

Introduction to the practice and examination of several modes of artistic expression in the lithographic processes of printmaking.

Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.

**403 Photography II U 5**

Second level production course in black and white photography emphasizing technical and aesthetic explorations commenced in 201 or 203.

Au, Wi, Sp Qtrs. 2 2-hr cl, 2 2-hr labs. Prereq: 201 or 203, and permission of instructor. Not open to students with credit for Photog 521.

**441 Ceramic Composition U 3**

Ceramic computations for art students; methods of representing ceramic composition; laboratory study and discussion of raw materials and their uses in bodies and glazes.

Au Qtr. 2 cl, 2 2-hr labs.

**503 Photography III U G 5**

Third level production course in black and white photography with emphasis in creative explorations commenced in 403, through a sustained body of work.

Sp Qtr. 2 2-hr cl, 2 2-hr labs. Prereq: 403.

**524 Large Format Photography U G 5**

Advanced still photography course dealing with the mechanics, aesthetics, and psychology of large format photography.

Au, Sp Qtrs. 2 2-hr cl, 2 2-hr labs. Prereq: 503 and written permission of instructor. Not open to students with credit for Photog 524. Student must supply 4 x 5 format film.

**531 Color Photography I U G 5**

Introduction to color negative printing, its history, and current aesthetic issues surrounding work in color photography.

Au, Sp Qtrs. 2 2-hr cl, 2 2-hr labs. Prereq: 372, 503, and written permission of instructor. Not open to students with credit for Photog 531. Film processing supplied by student.

**532 Non-Traditional Photographic Processes U G 5**

Non-conventional approaches to image production through alternative techniques and manipulations.

Wi Qtr. 2 2-hr cl, 2 2-hr labs. Prereq: 503 and permission of instructor.

**561 Expanded Arts I U G 5**

A creative and conceptual multimedia exploration of the various aspects of the self, time, and movement; introduction of alternatives in medium, technique, and product.

Prereq: Jr standing or permission of instructor.

**561.01 Aspects of Self**

Au Qtr. 6 studio hrs, 4 hrs arr. Prereq: Permission of instructor.

**561.02 Aspects of Time**

Wi Qtr. 6 studio hrs, 4 hrs arr. Prereq: Permission of instructor.

**561.03 Aspects of Movement**

Sp Qtr. 6 studio hrs, 4 hrs arr. Prereq: Permission of instructor.

**572 Intermediate Life Drawing U 5**

Advanced drawing problems utilizing life model, various media; observing and translating figure and environment as related elements in pictorial organization; outside assignments involving figure groups.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 272. Repeatable to a maximum of 20 cr hrs, including cr hrs earned in 570.

**573 Intermediate Painting U 5**

Intermediate painting; traditional subject matter such as figures, still lifes, and concepts relative to contemporary directions in painting.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 273 and 274. Repeatable to a maximum of 10 cr hrs.

**587 Third Year Sculpture Class U 5**

Advanced study of sculptural processes, techniques, and concepts.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 280, 281, and 282. Open only to sculpture majors.

**587.01 Part 1**



**587.02 Part 2**

Prereq: 587.01.

**587.03 Part 3**

Prereq: 587.02.

**589 Undergraduate Internship U 3 or 5**

Planned field, teaching, curatorial, or lab experience under academic and professional supervision.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Art majors with photog emphasis, jr standing or above, and permission of instructor. Repeatable to a maximum of 15 cr hrs including cr hrs earned in Photog 591. Interns may receive no monetary compensation.

**591 Studio Practice I U 2-5**

Intermediate studio practice, following and continuing the basic program of courses undertaken in the first two years.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. The following decimal subdivisions, with the exception of 591.12, are open only to jrs and srs majoring in art. Each decimal subdivision repeatable to a maximum of 20 cr hrs.

**591.03 Ceramics****591.04 Glass****591.06 Printmaking****591.11 Sculpture****591.12 Expanded Arts****595 Undergraduate Seminar in Studio Art U 3**

Presentations of studio work by seminar students, faculty, and visiting artists, with selected readings; accompanied by critical discussion emphasizing contemporary issues.

Wi Qtr. 1 3-hr cl. Prereq: Jr or sr standing in art or permission of instructor. GEC course.

**600 Photography: The Early Years U G 3**

A study of the discovery of photography and its early history, with its contribution to the arts, sciences, and society in the 19th century.

Au Qtr. 2 2-hr cl. Prereq: Hist Art 212 with grade of C- or better and permission of instructor. Not open to students with credit for Photog 600.

**601 20th-Century Photography to 1940 U G 3**

An in-depth survey of 20th century photographic history dealing with pictorialism, the photographic industry, straight photography, and the documentary approach to 1940.

Wi Qtr. 2 2-hr cl. Prereq: Hist Art 212 with grade of C- or better and permission of instructor. Not open to students with credit for Photog 601.

**602 History of Photography 1940-Present U G 3**

An extensive study of selected topics dealing with contemporary photographic history.

Sp Qtr. 2 2-hr cl. Prereq: Hist Art 212 with grade of C- or better and permission of instructor. Not open to students with credit for Photog 602.

**630 Intermediate Molten Glassmaking U G 5**

Molten glass as an artist's material; emphasis on the evolvement of a personal aesthetic through series studies.

Au, Wi, Sp Qtrs. Prereq: 230.

**631 Intermediate Cold Glassworking U G 5**

Innovational approach in fabricated glass imagery; emphasis on the growth of artistic development through series studies.

Au, Wi, Sp Qtrs. Prereq: 231.

**635 Photographic Criticism U G 3**

Reading, lectures, and discussions dealing with the study and practice of photographic criticism to facilitate and enrich the understanding and criticism of photography.

Wi Qtr. 2 2-hr cl. Prereq: 403 or 636 or Art Ed 604 or written permission of instructor. Not open to students with credit for Art Ed 635 or Photog 635. Cross-listed in Art Education.

**636 Perception and Photography U G 3**

Comparative consideration of human perception, the phenomenology of photography images, and the aesthetics of photography.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for Photog 700D.

**641 Ceramic Reproduction Processes U G 5**

Studies in the designing, fabrication, and uses of models and molds in such multiple ceramic production processes as casting, jiggering, and pressing.

Wi Qtr. 5 2-hr labs, 5 hrs arr. Prereq: Permission of instructor.

**642 Advanced Ceramic Laboratory U G 3**

Design and construction of large ceramic art forms.

Au Qtr. 3 2-hr labs, 3 hrs arr. Prereq: Permission of instructor.

**647 Survey of Ceramic Form and Technique U G 3**

Slide lectures; designed specifically to give the student potter an understanding of historical forms and technical processes; presented in chronological sequence.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**661 Expanded Arts II U G 5**

A creative and conceptual multimedia exploration of the various aspects of reflection, situation art, and space; introduction of alternatives in medium, technique, and product.

Prereq: Jr standing or permission of instructor.

**661.01 Aspects of Reflection**

Au Qtr. 6 studio hrs, 4 hrs arr.

**661.02 Aspects of Situation Art**

Wi Qtr. 6 studio hrs, 4 hrs arr.

**661.03 Aspects of Space**

Sp Qtr. 6 studio hrs, 4 hrs. arr.

**670 Advanced Drawing I U G 5**

Special problems in drawing, utilizing a wide range of media and methods and exploring a variety of materials in experimental approaches to drawing.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 274.

**673 Advanced Painting U G 5**

Research problems in painting with emphasis upon current directions, new media and techniques; lectures, discussions, and field trips.

Su, Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 10 cr hrs of 573. Repeatable to a maximum of 20 cr hrs.

**674 Figure Painting U G 5**

Figure painting utilizing life and costumed models; advanced problems involving figure groups.

Sp Qtr. 5 2-hr labs, 5 hrs arr. Prereq: 570 and 673 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**675 Photomechanical Printmaking U G 5**

Designed to introduce the technology of photomechanical reproduction utilized by the printing industry as a tool to be used by the printmaking student.

Au, Sp Qtrs. 2 2 1/2-hr labs, 2 1/2-hr labs, 7 hrs arr. Prereq: 377 or 378 or 379, and written permission of instructor. Not open to students with 15 cr hrs in 686. Repeatable to a maximum of 15 cr hrs.

**676 Advanced Relief Printmaking U G 5**

An intensive exploration of the relief processes as a means for individual expression.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 376. Open only to art or art educ majors, or by permission of instructor.

**677 Advanced Serigraphy U G 5**

An intensive exploration of the serigraphic processes as a means for individual expression.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 377 or permission of instructor.

**678 Advanced Intaglio U G 5**

An intensive exploration of the intaglio process as a means for individual expression.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 378 or permission of instructor.

**679 Advanced Lithography U G 5**

An intensive exploration of the lithographic processes as a means for individual expression.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 379 or permission of instructor.

**687 Fourth Year Sculpture Class U 5**

Study of sculptural processes, concepts, and self analysis as an artist.

Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 587.03. Open only to students specializing in sculpture.

**687.01 Part 1****687.02 Part 2**

Prereq: 687.01.

**687.03 Part 3**

Prereq: 687.02.

**690 Imagemakers' Seminar U G 3 or 5**

Advanced group investigation of individual photographic projects with weekly critique sessions.

Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: 25 hrs of photography course work and permission of instructor. Repeatable to 20 hrs including cr hrs earned in Photog 692 and 696.

**691 Studio Practice II U G 2-5**

Advanced studio practice beyond 591.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. The following decimal subdivisions, with the exception of 691.12, are open only to srs or grad students majoring in art. Each decimal subdivision repeatable to a maximum of 20 cr hrs, with the exception of 691.05, which is repeatable to a maximum of 20 cr hrs including cr hrs earned in Photog 691.

**691.03 Ceramics****691.04 Glass****691.05 Photography**

Arr. Prereq: Written permission of instructor.

**691.06 Printmaking****691.09 Drawing**

Prereq: Grad standing or 10 cr hrs of 673, and submission of 10-15 drawings/paintings on Advising Day previous to the intended qtr of study; open only to students with successful review by the area faculty and a completed, signed ISA form.

**691.10 Painting**

Prereq: 670 or grad standing, and submission of 10-15 drawings/paintings on Advising Day previous to the intended qtr of study; open only to students with a successful review by the area faculty and a completed, signed ISA form.

**691.11 Sculpture****691.12 Expanded Arts****693 Individual Studies U G 2-5**

Advanced study for students in specialized programs.

Prereq: Permission of instructor. Each decimal subdivision repeatable to a maximum of 20 cr hrs. These courses are graded S/U.

**693.05 Photography****693.10 Painting****693.11 Sculpture****693.12 Expanded Arts****694 Group Studies U G 2-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Each decimal subdivision repeatable to a maximum of 15 cr hrs.

**694.01 General****694.03 Ceramics****694.05 Photography****694.06 Printmaking****694.09 Drawing****694.10 Painting****694.11 Sculpture****694.12 Expanded Arts****695 Topics in Photographic Production U G 3 or 5**

Selected topics in photographic production, including formal lectures and demonstrations pertaining to current photographic research by faculty and visiting artists; topics vary.

2 2-hr cl, 2 2-hr labs.

**695.01 Color Photography II**

Continuation of 531 with emphasis on color printing.

Prereq: 531 and written permission of instructor. Not open to students with credit for Photog 532. Student must supply color film processing.

**695.02 Zone System**

History, theory, and mechanics; application of sensitometry to black and white film; its impact on the students' personal work

Sp Qtr. Prereq: 503 and written permission of instructor. Not open to students with credit for Photog 522.

**695.03 Studio Work and Studio Lighting**

Introduction to lighting equipment, principles, and techniques as applied to constructed/directed photography done predominantly in the studio environment.

Prereq: 503 and permission of instructor. Not open to students with credit for Photog 523 or 525.

**695.04 Social/Documentary Photography**

Advanced production course with emphasis on the conceptual framework underpinning the documentary tradition in historical and contemporary photography.

Au, Sp Qtrs. Prereq: 503 and permission of instructor. Not open to students with credit for Photog 695.04.

**695.05 Bookmaking**

Exploration of the history and aesthetics of photographic books with emphasis on structure, image sequence, and the relationship of images and text.

Au Qtr. Prereq: 503.

**695.06 Alternative Processes**

Advanced production and study of alternative processes in photography through the production of a cohesive body of work.

Prereq: 524, 695.02, and written permission of instructor. Not open to students with credit for Photog 695.07.

**695.07 Large-Scale Prints**

Advanced production course dealing with the technical and conceptual considerations of mural-sized prints.

Au Qtr. Prereq: 503 and permission of instructor.

**695.08 Alternative Photographic Systems**

Advanced production course exploring alternative imaging systems such as: pinhole cameras, inexpensive plastic cameras, polaroid cameras, etc.

Sp Qtr. Prereq: 503 and written permission of instructor. Student will make or supply alternate imaging system or camera.

**695.09 Special Topics**

Open topic that takes into consideration the research interests of current faculty or visiting artists.

Au Qtr. Prereq: 503 or permission of instructor.

**696 Senior Exhibition U 2**

Required exhibition of studio work by seniors in BFA programs, accompanied by development of a portfolio of work and an artist's statement; independent study tutorial.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Jr or sr standing in art or permission of instructor. Normally to be taken within the final two qtrs of study. GEC course.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****700 Selected Topics in History, Criticism, and Theory of Photography U G 4**

Selected topics in photographic theory, criticism, history, and aesthetics, including formal lectures pertaining to current theoretical research by faculty and visiting artists; topics vary.

Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: 503 and 9 cr hrs in photographic history, theory, or criticism; and written permission of instructor. Repeatable to a maximum of 15 cr hrs including cr hrs earned in Photog 700.

**H783 Honors Research U 3-5**

A research investigation resulting in a senior honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a 3.30 CPHR in an art specialization, permission of instructor under whose supervision the work is to be completed, and the College of the Arts Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**891 Studio Practice III G 2-5**

Graduate-level studio practice.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in art or permission of instructor. Each decimal subdivision repeatable to a maximum of 45 cr hrs.

**891.03 Ceramics****891.04 Glass Art****891.05 Photography****891.06 Printmaking****891.09 Drawing****891.10 Painting****891.11 Sculpture****891.12 Expanded Arts****893 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 20 cr hrs. These courses are graded S/U.

**893.03 Ceramics****893.05 Photography****893.06 Printmaking****893.10 Painting****893.11 Sculpture****893.12 Expanded Arts****894 Group Studies G 1-5**

Group studies for students in specialized programs.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Each decimal subdivision repeatable to a maximum of 15 cr hrs.

**894.03 Ceramics****894.05 Photography****894.06 Printmaking****894.10 Painting****894.11 Sculpture****894.12 Expanded Arts**

**895 Seminar in Studio Art G 2**

Presentations by students, faculty, and visiting artists, with critical discussion emphasizing contemporary issues.

Au, Wi Qtrs. 1 2-hr cl. Prereq: Grad standing. Repeatable to a maximum of 4 cr hrs.

**896 Graduate Teaching Seminar G 2**

Exercises and discussions exploring techniques used in organizing, presenting, and evaluating materials taught in studio art classes with special reference to the Foundation Program.

Au Qtr. 1 2-hr cl. Prereq: Permission of instructor and grad standing in studio art.

**991 Studio Practice IV G 2-5**

Advanced graduate studio practice.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in art or permission of instructor. Each decimal subdivision repeatable to a maximum of 45 cr hrs.

**991.03 Ceramics**

**991.04 Glass Art**

**991.05 Photography**

**991.06 Printmaking**

**991.09 Drawing**

**991.10 Painting**

**991.11 Sculpture**

**991.12 Expanded Arts**

**999 Research in Art G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Art Education

340 Hopkins Hall, 128 North Oval Mall, 292-7183

**120† Orientation to Art Education U 3**

Career possibilities explored through the history, theory, and issues of art education. Marantz.

Au, Wi Qtrs. 3 cl, 2 2-hr labs. Recommended concur: 189. Not open to students with credit for 200.

**189† Field Experience Survey U 3**

Directed field experience at urban and suburban sites to discover the range of settings for art education. Marantz.

Au, Wi Qtrs. 2 cl, 6 hrs field experience. Recommended concur: 120.

**225 Introduction to Art Education U 5**

Ideas, issues, and career possibilities in art education explored through readings, dialogue, and site visitations.

Au, Wi Qtrs. 3 2-hr cl.

**252 Introduction to the Computer in the Visual Arts U 5**

Introductory study of computer graphics in relation to the traditional visual arts and as a distinct art form; computer will be used to produce imagery.

Au, Wi, Sp Qtrs. 2 2-hr cl, 4 lab hrs arr. Prereq: Art 162 or Arts Col 160 or hist art courses which satisfy the visual and/or performing arts requirement of the GEC or permission of instructor.

**289† Field Experience U 3**

Strategies and curricular content for the teaching of art as related to audience and setting.

Au Qtr. 2 cl, 6 hrs field experience. Prereq: Soph standing. Repeatable to a maximum of 18 cr hrs in any combination of decimal subdivisions.

**289.01 Pre-School**

**289.02 Elementary**

**289.03 Secondary**

**289.04 Adults**

**289.05 The Exceptional Student**

**289.10 Civic, Business, and Cultural Settings**

**330 History and Philosophy of Art Education U 5**

History of the field, with emphasis on major ideas affecting the evolution of current trends.

Au, Wi Qtrs. 3 2-hr cl. Prereq: 225. Open only to art educ majors.

**352 Fundamental Three-Dimensional Computer Art Techniques U 5**

An introductory study of three-dimensional computer art techniques; three-dimensional still and animated imagery will be produced.

Au, Wi, Sp Qtrs. 2 2-hr cl, 4 lab hrs arr. Prereq: 252.

**360† Criticism of Visual Form U 3**

Looking at and talking about art as a component in art education through description, interpretation, and evaluation of visual form. Barrett or Lankford.

Au, Wi Qtrs. 3 cl. Prereq: Soph standing and one course in art or hist art.

**367 Second Writing Course U 5**

Au, Wi, Sp Qtrs. 2 2½-hr cl. English 110 or 111 or equiv, and soph standing.

**367.01 Ethnic Arts: A Means of Intercultural Communication**

A study of the artists, the artworks, and art worlds from diverse ethnic cultures in North America. Stühr.

Not open to students with credit for 367. BER/GEC/LAR course.

**367.02 Writing Art Criticism**

Writing critically about contemporary American art by a variety of artists with diverse points of view.

GEC/LAR course.

**375 Social and Cultural Factors in Art Education U 5**

Investigation into the role of culture, social class, gender, and age in understanding art and the diverse audiences served by art education.

Wi Qtr. 3 2-hr cl. Prereq: 330. GEC course.

**401† Methods in Planning for Art Education U 3**

Planning for the teaching of art studio, criticism, history, and the study of art in society for elementary and secondary schools. Daniel.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 120 and 189, and successful completion of 25 cr hrs in studio art or hist art.

**408† Planning for Non-Traditional Settings U 3**

Art education curriculum planning for museum patrons, and for audiences including the elderly, the handicapped, the incarcerated, and the mentally ill.

Wi Qtr. 2 2-hr cl. Prereq: 6 cr hrs in art educ, including either 189 or 289; or permission of instructor. For art educ or educ majors.

**420† Argument and Personal Theory in Art Education U 3**

Examination of the nature of argument and selected theories of art and art education toward refining the student's personal theoretical positions.

Sp Qtr. 2 2-hr cl. Prereq: 120.

**430† History of Art Education U 3**

Examination of art education; study of changes in art and art teaching. Efland.

Wi Qtr. 3 cl.

**440† Graphic Communication Techniques for Art Teachers U 3**

Projects, discussions, and readings dealing with the design and symbolic use of letters and their relationship with other images toward communicating ideas in an educational context.

Au Qtr. 3 2-hr labs.

**445 Teaching of Studio Activities U 3**

Exploration of instructional application of various art materials for educational settings.

Au, Wi Qtrs. 2 3-hr labs. Prereq: 120 and 189; concur: 289; and successful completion of 25 combined cr hrs in studio art and hist art. 401 recommended. Repeatable to a maximum of 9 cr hrs.

**465\* Topics in Contemporary Art for Art Educators U 3**

An undergraduate seminar dealing with aspects of contemporary art with emphasis on its relationship to art education theory and practice. Arnold.

Au Qtr. 3 cl. Prereq: Jr standing in art educ.

**488 Concepts in Planning Art Education U 5**

Planning for and management of the social and physical environment of art education.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 375.

**489 Laboratory Field Experience U 3**

Strategies and curricular content for teaching art studio, art criticism, art history, and the study of art in society.

Su, Au, Wi, Sp Qtrs. 1 cl, 5 hrs lab field experience. Prereq: 289, 401 or 408, 445, and written permission of 489 coordinator. Repeatable to a maximum of 9 cr hrs.

**489.01 Pre-School**

**489.02 Elementary**

**489.03 Secondary**

**489.04 Adults**

**493 Individual Studies U 1-5**

Individual studies and project work in specified problems of the field of art education.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**494 Group Studies U 1-5**

Group studies in professional areas of specified content.

Su, Au, Wi, Sp Qtrs. Prereq: 120 or 200 or written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**525† Senior Seminar U 5**

Readings reflecting and writings revolving around themes drawn from current issues confronting the field.

Sp Qtr. 2-2-hr cl. Prereq: 488 and sr standing. Open only to art educ majors. GEC/LAR course.

**586 Student Teaching in Art in Elementary Schools U 3-8**

Practical and theoretical study in educational settings working with elementary school-age children and cooperating teachers.

Au Qtr. Individual conferences and a wkly seminar. Prereq: 4th yr standing and written permission of art educ field experience coordinator. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**587 Student Teaching in Art in Secondary Schools U 3-15**

Practical and theoretical study in educational settings working with secondary school-age students and cooperating teachers.

Au Qtr. Individual conferences and a wkly seminar. Prereq: 4th yr standing and written permission of art educ field experience coordinator. Repeatable to a maximum of 15 cr hrs for 7-12 certification or 8 cr hrs for K-12 certification. This course is graded S/U.

**588 Art Education for Exceptional Children U 5**

Strategies that can be used in teaching art to exceptional populations and lesson planning for the mainstreamed school setting. Schiller.

Sp Qtr. 3-2-hr cl. Prereq: 488 and Ed-T&P 451. Open only to art educ majors.

**589 Internship in Art Education U 1-15**

Students intern at non-public school sites to synthesize and apply what they have learned in the classroom through concentrated practice in the field.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Completion of all other program requirements. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**595 Seminar on Topical Issues in Art Education I U 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 120 or 500. Repeatable to a maximum of 15 cr hrs.

**600 Art for Elementary Teachers U G 3**

Problems of teaching in terms of personal knowledge about art, insight into children's art work, and understanding of elementary school curriculum.

Su, Au, Wi, Sp Qtrs. 3-2-hr labs. Prereq: Arts Col 160 or 5 cr hrs of course work in art or art educ or hist art. Not open to students with credit for 500.

**601 Curriculum Design for Art History U G 3**

Examination of art history concepts and processes to plan K-12 school curricula. Chanda.

Wi Qtr. 1 2½-hr cl. Prereq: 488, Arts Col 160, and 10 cr hrs of hist art course work; or permission of instructor.

**610† Planning for the Arts in Education U G 3**

Study and development of plans to produce arts advocacy and arts curricula for various educational purposes, needs, and settings.

Wi Qtr. 1 2½-hr cl. Prereq: Sr standing.

**620† Theory of Art Education U G 3**

Development of aesthetic sensitivity from the theoretical perspectives offered by philosophy, psychology, and the social sciences with implications for teaching. Efland.

Sp Qtr. 2 1½-hr cl. Prereq: 420 or 430, and Philos 240. Not open to students with credit for 603.

**631† Nontraditional Art Education Settings U G 3**

Study of theories of non-traditional art education programs and the corresponding settings.

Sp Qtr. 2½-hr cl. Prereq: Sr standing.

**635 Photographic Criticism U G 3**

Readings, lectures, and discussions dealing with the study and practice of photographic criticism to facilitate and enrich the understanding of criticism and photography. Barrett.

Wi Qtr. 2-2-hr cl. Prereq: 654, or Photog 606 or 521, or permission of instructor. Not open to students with credit for Photog 635. Cross-listed in Photography and Cinema.

**636† The Arts in Education U G 3**

Examination of ideas about the arts in education through analysis of programs, projects, and political processes that involve the visual arts, dance, music, and theatre. MacGregor.

Au Qtr. 1 2½-hr cl. Prereq: Sr standing.

**640 Critical Dialogue about Art U G 3**

Theory and practice of engaging others in informed discussion of works of art. Barrett.

Sp Qtr. 2-2-hr cl. Prereq: 360 or 635 or permission of instructor. Not open to students with credit for 560.

**651† The Role of Newer Media in Art Education U G 3**

Study of the role of photographic and electronic arts in art education through an examination of literature, research, and practical applications. Barrett.

Au Qtr. 3-2-hr cl. Prereq: Jr standing.

**652 Computer Graphics in the Arts and Education U G 3**

Application of computer imaging for the arts and interactive educational programs. Scott.

Wi Qtr. 1-3-hr cl. Prereq: Sr or grad standing.

**657† Bookmaking U G 3**

Conception, design, construction, and criticism of limited edition books as aesthetic objects. Tauber.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 25 cr hrs of art or photog or ind dsgn, or permission of instructor.

**662† Television: An Art Education Perspective U G 3**

Application of the television medium in art education curricula and research, examined and developed through criticism and readings. Barrett.

Sp Qtr. 1-3-hr cl. Prereq: Jr standing.

**665\* Content and Structure in Arts Education U G 3**

Students from art, dance, music, and theatre education engage in dialogue, research, and peer teaching focusing upon the educational content and structure of each discipline. Lankford.

Sp Qtr. 1 2½-hr cl. Open only to majors in art, dance, music, and theatre education and to grad students seeking certification. Not open to students with credit for Music 665. Cross-listed in Music.

**670 Public Policy and the Arts U G 3**

Issues in arts policymaking as they affect community arts services.

Au Qtr. 1 2½-hr cl.

**671 Role of the Community Arts Administrator U G 3**

The administrative role in economic development, human resource development, and organizational development in the arts.

Wi Qtr. 1 2½-hr cl, arr. Prereq: 670 or permission of instructor.

**672 Planning for Community Arts Services U G 3**

Grantsmanship, fundraising, marketing, and public relations.

Sp Qtr. 1 2½-hr cl. Prereq: 671 or permission of instructor.

**680 Aesthetics in Art Education U G 3**

Concepts and strategies for including aesthetics in art education curricula. Lankford.

Sp Qtr. 2 1½-hr cl. Prereq: 488 or grad standing.

**688 Instructional Applications in Art G 5**

Preparation for art instruction through curriculum development, study of instructional strategies, and peer teaching.

Au, Wi, Sp Qtrs. 3-2-hr cl. Prereq: 588 or equiv. Open only to art educ majors. Repeatable to a maximum of 10 cr hrs.

**689 Laboratory Field Experience G 5**

Planning, teaching, and evaluation of a unit of instruction for implementation in an art program serving the community.

Su, Au, Wi, Sp Qtrs. 1-2-hr cl, 1-6-hr lab. Prereq: 688 and permission of instructor. Open only to art educ majors. Repeatable to a maximum of 10 cr hrs.

**691 Applied Research in Art Education U G 2-5**

Studies in empirical, philosophical, curriculum, or studio problems in art education.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

**692 Workshop in Art Education U G 1-15**

Workshop for study of issues/practices in the field of art education.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 30 cr hrs.

**693 Individual Studies U G 1-15**

Advanced study for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic**

## 698.02 Foreign

**700 Issues in Graduate Study in Art Education G 3**

Overview of topics in thesis and dissertation research, graduate faculty research, national and international issues, and university resources and policies.

Au, Wi Qtrs. 1 3-hr cl. Prereq: Grad standing. Must be taken during the first year of graduate study in the major.

**705 Overview of Research Methods in Art Education G 5**

Introduction to a wide range of methods applicable to art education research problems, including historical, philosophical, ethnographic, survey, experimental, and case study methods.

Wi, Sp Qtrs. 2 2-hr cl. Must be taken during the first year of graduate study in the major.

**720 Philosophy of Art Education Literature Survey G 3**

Discussion of writings by art educators, aestheticians, artists, critics, and others for historical perspective on and to distinguish the nature of philosophy of art education. Lankford.

Au Qtr. 3 cl.

**731 Evaluation in Art Education G 3-5**

Evaluation of student performance in art; informal instruments for collecting data for use in assessing programs. Eiland.

Wi Qtr. 2 2-hr cl. Prereq: 807 or equiv with written permission of instructor.

**765\* Contemporary Art and Art Education G 3**

A study of recent developments in contemporary art and the implication of those developments on art education practice and curriculum design. Arnold.

Au Qtr. 4 cl. Prereq: Written permission of instructor.

**776 Workshop in Art Education U G 1-5**

Small group demonstrations of trends, processes, and teaching materials for curriculum development in art education; preparation of study materials for teaching art.

Su, Au, Wi, Sp Qtrs. Prereq: 620 or equiv and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of reading and research arranged for each student, with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a pt-hr ratio of 3.50 in the major area and permission of instructor under whose supervision the work is to be completed and the Honors Committee of either the College of the Arts or the College of Education. Repeatable to a maximum of 15 cr hrs. Satisfactory completion of at least 8 cr hrs is required of candidates for an undergrad degree *with distinction* in art educ. This course is graded S/U.

**786 Student Teaching in Art in Elementary Schools G 12**

Field-based teaching experience at the elementary level integrating theory, research, and practice.

Au, Wi, Sp Qtrs. 30 hrs/wk on site. Prereq: 689, 705, and permission of instructor; concur: 788.01. This course is graded S/U.

**787 Student Teaching in Art in Secondary Schools G 12**

Field-based teaching experience at the secondary level integrating theory, research, and practice.

Au, Wi, Sp Qtrs. 30 hrs/wk on site. Prereq: 689, 705, and permission of instructor; concur: 788.02. This course is graded S/U.

**788 Teaching and Research Seminar G 3**

Projects and discussions related to current topics and issues in the theory, research, and practice of art teaching in schools.

Au, Wi, Sp Qtrs. 1 3-hr cl.

**788.01 Elementary**

Prereq: 705; concur: 786.

**788.02 Secondary**

Prereq: 705; concur: 787.

**795 Seminar on Topical Issues in Art Education II G 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 15 cr hrs in art educ or permission of dept. Repeatable to a maximum of 15 cr hrs.

**801+ Current Perspectives on Art Education G 2**

Repeatable to a maximum of 6 cr hrs in each decimal subdivision.

**801.01 Departmental Symposium**

Departmental faculty make formal presentations for formal response and general discussion.

Au Qtr.

**801.03 Visiting Professionals Symposium**

Resource persons from the community and professions make formal presentations for formal response and discussion.

Su Qtr. Prereq: 801.01 or 801.02 or 804.

**805 Empirical Problems in Art Education G 3-5**

An introduction to the language, methodology, and application of empirical research in art education; the identification and isolation of appropriate empirical problems in the field. Koroscik.

Wi Qtr.

**807 Curriculum Problems in Art Education G 3-5**

An examination of the functions of curricular plans as tools for transforming selected conceptions of art education into teacher and student activities in the classroom. Eiland.

Wi Qtr.

**830 Seminar in the History of Art Education G 5**

Examination of interpretative perspectives in the history of art education; classification of primary and secondary sources, and their use in historical research.

Sp Qtr. 2 2 1/2-hr cl. Prereq or concur: 705, or permission of instructor.

**889 Internship in Art Teaching G 2-15**

Supervised professional teaching experience toward certification for post-degree students and extended field work for graduate students.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**893 Individual Studies G 1-15**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**894 Group Studies G 1-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**911 Research Problems in Art Education G 3-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs.

**998 Research in Art Education: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Art Education: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Arts and Sciences

121 Denney Hall, 164 West 17th Avenue, 292-7226

**H100 Arts and Sciences Honors Survey U 1**

Honors curriculum and special opportunities; procedures necessary to function effectively within the University.

Au Qtr. Prereq: Enrollment in the ASC Honors Program. Not open to students with credit for 100, Agr 100, Arts Col 100, Engineer 100, Home Ec 100, Nat Res 100, or UVC 100. This course is graded S/U.

**101 Freshman Seminar U 1**

Seminars on varying topics taught by University faculty.

Prereq: Fr or soph standing or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**294 Interdisciplinary Group Studies U 1-5**

Study of special or interdisciplinary topics at an introductory level.

H294 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Open to students who meet instructor's stated prereqs. Repeatable to a maximum of 15 cr hrs.

**298 Study Tour U 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**298.01 Domestic****298.02 Foreign****400 Career Planning Seminar U 1**

Discussion of careers for liberal arts majors; employment trends; effective job search strategies; resumes, vitae, and cover letter preparation; graduate and professional school opportunities; interviewing techniques.

Wi, Sp Qtrs. 2 cl. These courses are graded S/U.

**400.01 General**

H400.01 may be available to students in the ASC Honors Program and by permission of instructor. Prereq: 400.01: Soph or jr standing. H400.01: Jr standing in ASC Honors Program and permission of instructor. Not open to srs except by permission of instructor, or to Capital program students, or to students with credit for 400.02.

**400.02 Capital Program**

Prereq: Soph or jr standing in Capital program. Not open to srs except by permission of instructor, or to students with credit for 400.01.

**489 Professional Practice**

Su, Au, Wi, Sp Qtrs. Arr.

**489.01 Credit Cooperative Education Program U 2**

Employment through the Cooperative Education program conducted under the supervision of arr ASC faculty member; midterm and comprehensive final reports required.

Prereq: Registration with the co-op education program, minimum cumulative pt-hr ratio of 2.50, soph standing or above, completion of credit co-op education agreement form with instructor under whose supervision the work is to be completed, and permission of the director of co-op education. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**489.02 Noncredit Cooperative Education Program U 0**

A cooperative education or internship assignment conducted under the supervision of the employer; monitoring and evaluation by the director of the co-op program.

Prereq: Permission of the director of the co-op education program. Repeatable to a maximum of 5 times. This course is graded S/U.

## Arts, College of the

304 Mershon Auditorium, 30 West 15th Avenue, 292-5172

**160 Art and Music since 1945 U 5**

A survey of the visual arts and music in the western world since 1945, based on live and recorded performances and exhibitions.

Au, Wi, Sp Qtrs. 2 2-hr cl, 1 1-hr rec. Not open to students with credit for Art Educ 160. BER/GEC/LAR course. VPA Admis Cond course.

**161 Dance and Theatre, 1945 to the Present U 5**

Survey of contemporary practices in western dance and theatre from 1945 to the present, with emphasis on major stylistic trends, multicultural influences, and principal artists and their works.

Au, Wi, Sp Qtrs. 2 2-hr cl, 1 1-hr rec. BER/GEC/LAR course. VPA Admis Cond course.

**294 Group Studies U 1-5**

Interdepartmental course involving studies in two or more areas of the visual and performing arts.

Prereq: Permission of dean. Repeatable to a maximum of 18 cr hrs.

**494 Group Studies U 1-5**

Group studies in selected interdisciplinary areas in the arts.

Arr. Prereq: Jr standing or above, and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies U G 2-5**

Advanced studies for students engaged in interdisciplinary investigations within the College of the Arts.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Interdepartmental course involving studies in two or more areas of the visual and performing arts.

Prereq: Permission of dean. Repeatable to a maximum of 18 cr hrs.

**790 Interdisciplinary Research Seminar in Computer Technology in the Arts G 5**

Interdisciplinary investigations in artmaking and industrial and instructional design through the use of computer technology.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

## Astronomy

5036 Smith Laboratory of Physics, 174 West 18th Avenue, 292-1773

**150 Descriptive Astronomy U 5**

Mankind's view of the nature of the physical universe, and the manner in which it arrived at that view; telescopes and planetarium may be used.

Su Qtr. Prereq: Math 075 or 076 or Math Placement Level R. Not open to students with credit for 161, 162, 191, or 192. Not intended for ASC BS students. This course is available for EM credit. BER/LAC/LAR course. NS Admis Cond course.

**155† Current Topics in Astronomy U 5**

A detailed study of several topics of current interest in the fields of astronomy, astrophysics, and cosmology, presented for non-science majors.

Sp Qtr. 5 cl. Prereq: 150 or 162 or 292, or written permission of instructor. Not recommended for students with a grade of below B in prereq. Not intended for ASC BS students. BER/LAC/LAR course. NS Admis Cond course.

**161 Introduction to Solar System Astronomy U 5**

Physical nature of the sun and its family of planets, satellites, comets and minor bodies; gravitation, light, and telescopes.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Math 075 or 076 or Math Placement Level R. Not open to students with credit for 150 or 191. Not intended for ASC BS students. This course is available for EM credit. BER/GEC/LAR course. NS Admis Cond course.

**162 Introduction to Stellar, Galactic, and Extragalactic Astronomy U 5**

Structure, motions, and evolution of stars, interstellar material, galaxies, and the universe as a whole.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 161 or 191. Not open to students with credit for 150 or 192. Not intended for ASC BS students. This course is available for EM credit. BER/GEC/LAR course. NS Admis Cond course.

**291 Basic Astrophysics and Planetary Astronomy U 5**

Motions and physical nature of objects in the solar system; electromagnetic radiation, telescopes, and astronomical detectors.

Au Qtr. 5 cl. Prereq or concur: Physics 133; or permission of instructor. Not open to students with credit for 191. Intended only for BS students. This course is available for EM credit. BER/LAC/LAR course. NS Admis Cond course.

**292 Stellar, Galactic, and Extragalactic Astronomy and Astrophysics U 5**

Observational and physical properties of the sun and stars; stellar structure and evolution; interstellar medium; galaxies and cosmology.

Wi Qtr. 5 cl. Prereq: 291 or permission of instructor. Not open to students with credit for 192. This course is available for EM credit. BER/LAC/LAR course. NS Admis Cond course.

**294 Group Studies U 1-5**

Special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**350 Methods of Astronomical Observation and Data Analysis U 5**

Astronomical observation techniques and quantitative analysis of astronomical data; practical experience with modern astronomical instrumentation and computer-based reduction, analysis, and interpretation of astronomical data.

Sp Qtr. 3 cl, 1 2-hr lab plus independent observation. Prereq: 150 or 162 or 192 or 292, Math 153, and Physics 133. GEC course.

**640 Stellar Astronomy U G 4**

Distances, luminosities, radii, temperatures, and masses of stars; the distribution and motion of stars; interstellar matter; and galactic dynamics.

Au Qtr. Prereq: 192 or 292, Math 254, and Physics 133; or permission of instructor. Not open to students with credit for 650.

**641 Introduction to Astrophysics U G 4**

Astrophysics of stellar interiors and atmospheres; interstellar medium and nebulae.

Wi Qtr. 2 2-hr cl. Prereq: 640, Math 255, and Physics 531 or 631; or permission of instructor. Not open to students with credit for 651.

**642 Extragalactic Astronomy U G 4**

Observed properties of galaxies; cosmology.

Sp Qtr. 2 2-hr cl. Prereq: 641 or permission of instructor.

**693 Individual Studies U G 1-15**

Independent library or laboratory work on a special problem in observational or theoretical astronomy.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.



**H783 Honors Research U 3-5**

A program of study arranged for each student, with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the astron courses taken, with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA or BS with *distinction* in astron. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**820\* Radiation Measurements G 3**

Techniques for obtaining and interpreting measurements of radiation from astronomical sources.

Au Qtr. 3 cl. Prereq: Permission of instructor.

**822\* Electromagnetic Radiation G 3**

Continuous radiative processes of astrophysical interest.

Au Qtr. 2 1½-hr cl. Prereq: Physics 656 or permission of instructor.

**823\* Theoretical Spectroscopy G 3**

Theory of atomic spectra, including radiative and collisional processes for line formation by atoms, ions, and molecules in plasmas.

Au Qtr. 3 cl or 2 1½-hr cl. Prereq: Physics 532 or 632 or permission of instructor.

**825\* Radiative Gas Dynamics G 3**

Dynamics of gas flows in astrophysical situations, including stellar winds, accretion, shock waves, and jets.

Wi Qtr. 3 cl or 2 1½-hr cl. Prereq: Physics 621 or permission of instructor.

**830\* Properties of Stars and Galaxies G 3**

Observed properties of individual stars and normal (non-active) galaxies.

Wi Qtr. 3 cl. Prereq: 640 and Physics 533 or 633 or 706, or permission of instructor.

**831\* Stellar Interiors G 3**

Theoretical aspects of the interiors and evolution of single stars.

Sp Qtr. 3 cl. Prereq: 641, Math 255 and 551, and Physics 533 or 633 or 706, or permission of instructor.

**832\* Stellar Atmospheres G 3**

Theory of the atmospheric structure of stars, emphasizing spectral line formation.

Wi Qtr. 3 cl or 2 1½-hr cl. Prereq: 641, Math 255 and 551, and Physics 533 or 633 or 706; or permission of instructor.

**836\* Observed Properties of Stars G 3**

Photometric and spectroscopic observations of stars, including infrared and ultraviolet wave lengths; observations of intrinsic variable stars.

Wi Qtr. 2 1½-hr or 3 cl. Prereq: 830 or permission of instructor.

**850 Current Topics in Astronomy G 1-5**

Staff members and visiting lecturers present material on their current research problems.

Au, Wi, Sp Qtrs. Prereq: 10 cr hrs at 600 level or higher in each of astron, physics, and math; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**868\* Galactic Astronomy G 3**

Structure and kinematics of the Galaxy.

Wi Qtr. 3 cl. Prereq: 640 and Physics 533 or 633 or 706, or permission of instructor.

**869\* Active Galaxies and Observational Cosmology G 3**

Properties of active galactic nuclei and quasars, the cosmological distance scale, and observational tests of cosmological models.

Sp Qtr. 3 cl or 2 1½-hr cl. Prereq: Permission of instructor.

**870\* Stellar Systems G 3**

Dynamics and evolution of stellar systems.

Sp Qtr. 3 cl. Prereq: 868 or permission of instructor.

**871\* Interstellar Medium G 3**

Physical processes occurring in interstellar gas and dust.

Sp Qtr. 3 cl or 2 1½-hr cl. Prereq: 825 or permission of instructor.

**873\* Cosmology G 3**

Structure and evolution of the Universe; physical processes in the Big Bang.

Au Qtr. 3 cl. Prereq: Permission of instructor.

**880 Directed Research G 3**

Participation by the student in the research being conducted by a professor.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs only under supervision of different faculty members. This course is graded S/U.

**894 Group Studies G 1-5**

Special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

**999 Research in Astronomy and Astrophysics G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Atmospheric Sciences

103 Bricker Hall, 190 North Oval Mall, 292-2514

**230 Basic Meteorology U 5**

Introduction to the underlying physics of the atmosphere; basic equations of thermodynamics, radiation, and dynamics are presented and used to explain selected atmospheric phenomena.

Au Qtr. 5 cl. Prereq: Math 152 and Physics 132.

**General Meteorology**

See Physics 503—A description of weather phenomena and the physical processes underlying them; intended primarily for nonphysics majors.

**Climatology**

See Geog 520—The elements and the controls of climate; types of climate and their distribution; climates and their effects on the economic and other activities of man.

**620 Synoptic Meteorology Laboratory U G 3**

Introduction to reading and interpretation of synoptic weather maps and diagram- and data-communication systems.

Au Qtr. 2 cl, 1 lab hr. Prereq or concur: 230 or Geog 520. Not open to students with credit for Geog 620. Cross-listed in Geography.

**Microclimatology: Boundary Layer Climatology**

See Geog 622.01—Theory of exchanges of energy and mass at the earth-atmosphere interface as it relates to microclimates with particular emphasis upon radiation and climate.

**Microclimatology: Microclimatological Measurements**

See Geog 622.02—Practical experience in the fabrication of instruments, deployment of measurement systems in the field and recording of data related to microclimates.

**Synoptic Meteorology: Synoptic Analysis and Forecasting**

See Geog 623.01—Theory and practice in synoptic weather analysis and forecasting.

**Synoptic Meteorology: Severe Storm Forecasting by Radar and Satellite**

See Geog 623.02—The theory and application of radar and satellite imagery in weather forecasting; emphasis on severe thunderstorms, tornadoes, and hurricanes; analysis of their evolution and structure.

**631 Atmospheric Thermodynamics U G 5**

An analysis of the fundamentals of atmospheric thermodynamics and their application to meteorological problems.

Au Qtr. 5 cl. Prereq: Math 153.

**637 Dynamic Meteorology I U G 5**

Fundamental problems in dynamic meteorology; components of the equations of atmospheric motion are derived, and vorticity and divergence in the development of meteorological systems.

Wi Qtr. 5 cl. Prereq: 631 or Aero Eng 505, and Math 415.

**638 Dynamic Meteorology II U G 5**

Advanced problems in dynamic meteorology; use of the equations of motion in numerical models of the atmosphere, especially those used by the National Weather Service.

Sp Qtr. 5 cl. Prereq: 637 or Aero Eng 765.

**693 Individual Studies in Atmospheric Sciences U G 1-5**

Independent studies on selected atmospheric sciences related topics.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**694 Group Studies in Atmospheric Sciences U G 1-5**

Special studies on topics directly related to the atmospheric sciences.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**Fundamentals of Atmospheric Dynamics**

See Aero Eng 765—Advanced level treatment of basic topics in the dynamics and thermodynamics of atmospheric motion.

**Dynamic Climatology**

See Geog 821—Dynamics, thermodynamics, energy conservation, flows, conversion processes; large scale circulation patterns with particular emphasis upon turbulence at the synoptic scale; weather processes, and regional climates.

**Microclimatology**

See Geog 822—Radiation and turbulence processes, conduction; variation wind, temperature, humidity, soil moisture, evaporation, soil temperature; influence of vegetation and artificial structures.

**Applied Climatology**

See Geog 823—Analysis of climatic and environmental change on various time scales; man's impact on climate; theory and application of long-range and climate forecasting.

**881 Atmospheric Sciences Seminar G 2-4**

A multidisciplinary seminar reviewing selected topics in atmospheric sciences and related fields.

Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**893 Individual Studies in Atmospheric Sciences G 1-5**

Reviews the state-of-the-art of selected topics in the atmospheric sciences-related fields of meteorology and climatology, air environment studies, or aeronomy and solar-terrestrial relations.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**894 Group Studies in Atmospheric Sciences G 1-5**

Advanced studies on topics directly related to the atmospheric sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**999 Research in Atmospheric Sciences G Arr**

Research for thesis or dissertation purpose only.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in atmos sc. This course is graded S/U.

## Aviation

Aviation Building, 164 West 19th Avenue, 292-5460

**294 Group Studies in Aviation U 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**300 The National Aviation System U 3**

A comprehensive survey of the national aviation system.

Su, Au, Wi, Sp Qtrs. 3 cl or 1 3-hr cl.

**310 Private Pilot Fundamentals U 5**

Study of flight fundamentals, aircraft operation, weather, and regulations essential for the private pilot.

Su, Au, Wi, Sp Qtrs. 5 cl, or 1 2-hr cl and 1 3-hr cl. Prereq: Math 131, Physics 111.

**322 Aviation History U 3**

A survey of the evolution of aviation; emphasis on the development of the national aviation system and its social, economic, and political impact.

Wi Qtr. 3 cl, or 1 3-hr cl.

**324\* Distinguished Aviation Lecture Series U 2**

An overview of contemporary opportunities, challenges, and trends in aviation; invited presentations by distinguished guest speakers supplemented by faculty lectures.

Sp Qtr. 2 1-hr cl. Repeatable to a maximum of 6 cr hrs.

**341 Private Pilot Flight Lab I U 2**

Laboratory course providing students an opportunity to learn the fundamentals of flight and airplane operation leading to solo flight.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**342 Private Pilot Flight Lab II U 2**

Laboratory course providing students an opportunity to learn the fundamentals of flight and airplane operation leading to Private Pilot certification.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 310 and 341. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**410 Aviation Weather U 3**

Overview of weather theory; identification of aviation weather hazards and methods for obtaining current weather data.

Au, Wi, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 310.

**411 Aircraft Performance U 3**

Studies of airframe components, performance and design characteristics, power plants, and federal certification of aircraft.

Au, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 310 and Physics 111 or higher.

**413 Commercial Pilot Fundamentals U 3**

A study of high-performance airplane operational considerations, systems, and components and the Federal Aviation Regulations which govern the operations, privileges, and limitations of commercial pilots.

Au Qtr. 1 3-hr cl. Prereq: 410.

**414 Flight Physiology U 3**

An examination of the adverse effects of flight on human physiological functions, perceptions, and performance.

Au Qtr. 3 cl or 1 3-hr cl. Prereq: 310.

**415 Instrument Flight Fundamentals U 3**

Study of flight by reference to instruments, IFR regulations, and procedures in the national airspace system.

Au, Wi, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 410.

**417 Advanced Multiengine Operations U 2**

The study of the principles of operation of the contemporary corporate airplane.

Wi Qtr. 1 2-hr cl. Prereq: 411.

**418 Air Transport Operations U 3**

Examination of the elements of airline transport operations and the functions of the aircraft dispatcher and flight engineer.

Sp Qtr. 1 3-hr cl. Prereq: 411 and 415.

**421 Flight Instruction Methodology U 3**

Principles of teaching aeronautical subjects.

Au Qtr. 1 3-hr cl. Prereq: 411, 413, and 415.

**422 Instrument Instruction Methodology U 2**

Principles of teaching instrument flight theory and requirements.

Sp Qtr. 1 2-hr cl. Prereq: 421.

**441 Commercial Flight Lab 1 U 3**

Development of commercial pilot skills and experiences, fundamentals of instrument flight.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 342. Obtain equipment usage charge and permission slip at Ohio State Airport prior to scheduling.

**442 Commercial Pilot Flight Lab 2 U 3**

Further development of commercial pilot skills and experience, completion of instrument flight instruction.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 415 and 441. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**443 Commercial Pilot Flight Lab 3 U 3**

Complex airplane (SEL) flight instruction.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 442. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**444 Commercial Pilot SEL Flight Lab 4 U 3**

SEL commercial and instrument flight skills.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 413 and 443. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**445 Commercial Pilot SEL Flight Lab 5 U 3**

Leads to SEL commercial certificate.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 444. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**446 Commercial Pilot MEL Flight Lab 4 U 3**

Development of MEL commercial pilot flight skills; leads to multi-engine rating.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 413 and 443. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**447 Commercial Pilot MEL Flight Lab 5 U 3**

Development of MEL instrument flight skills; leads to MEL instrument rating.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 446. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**461 Flight Instructor ASEL Flight Lab U 3**

Development of skills and experience necessary for certification as flight instructor airplane SEL.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 421 and 445 or 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**462 Flight Instructor Instrument Airplane Flight Lab U 3**

Development of skills and experience necessary for flight instructor instrument rating.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 422 and 445 or 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**463 Flight Instructor AMEL Flight Lab U 3**

Development of skills and experience necessary for airplane MEL rating.

Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 421 and 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

**489 Professional Practice in Industry U 2**

Actual employment in a co-op program in the aviation industry and the preparation of a report based on the work experience.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to co-op program in aviation and written permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**493 Individual Studies in Aviation U 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**510 The National Airspace System U 3**

Overview of proposed national airspace system careers, implementation, airspace, facilities, safety, new electronic systems, economic, social, and political implications.

Au Qtr. 1 3-hr cl. Prereq: 415.

**520 Aviation Communication U 3**

Communication skills and theory for the aviation professional; includes pilot/ATC radio communications, public relations, organizational structure, and written and verbal reports.

Au, Wi, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 300 and 310.

**522 Principles of Aviation Organizations U 3**

Applied study of communication in and the structure of aviation organizations: FBO, FAR 135, FAR 121, and Corporate.

Sp Qtr. 3 cl or 1 3-hr cl. Prereq: 520.

**530 Aviation Law U 3**

Study of the legal system and the important legal concepts affecting aviation.

Au, Wi, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 520.

**532 Aviation Safety Investigation U 3**

Functions of air safety investigation, aircraft accident reconstruction and investigation, aircraft accident prevention, and role of expert witness.

Wi Qtr. 1 3-hr cl. Prereq: 411.

**540 Aviation Human Factors U G 3**

An examination of human factors problems in aviation safety including aircraft design, aviation systems design, and human behavior.

Au, Wi, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 310; 410 and 415 recommended.

**550 Aviation Management U 3**

A blend of accepted business procedures and practical techniques applied to aviation management; includes general aviation, airlines, airports, aircraft, and air traffic control.

Au, Wi, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 300, 310 and Econ 200.

**552 Airport Management U 3**

Comprehensive study of airport operations and management; role of the airport manager in planning, finance, administration, public relations, socio-political and environmental considerations, and operational requirements and maintenance.

Au, Sp Qtr. 1 3-hr cl. Prereq: 550.

**593 Individual Studies in Aviation U G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**595 Senior Seminar U 2**

Selected studies of theory and practice in aviation; topic varies quarterly.

Wi Qtr. 1 2-hr cl. Open only to aviation majors with sr standing.

**640 Man-Machine Simulation in Training and Engineering U G 3**

An analysis of current research and problems in man-machine simulation of complex systems for training and research.

Sp Qtr. 3 cl or 1 3-hr cl. Prereq: 415 and 540.

**650 Air Transportation Analysis U 3**

Analysis and planning of air transportation systems; focus on air transportation supply and demand components, and examples from U.S. domestic and international airlines, passenger and cargo.

Au, Wi, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 550 and Econ 400. Not open to students with credit for Airline Planning Techniques 294.

**652 The International Aviation System U G 3**

Overview of the international system: aeropolitical framework, air transport, air navigation, and contemporary issues.

Au Qtr. 3 cl or 1 3-hr cl. Prereq: 550.

**654 Airline Marketing U G 3**

Contemporary marketing concepts and procedures and their applications in the airline industry with emphasis on domestic and international passenger analysis and service planning.

Sp Qtr. 3 cl or 1 3-hr cl. Prereq: 550. Not open to students with credit for 694, Airline Marketing.

**694 Group Studies in Aviation U G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

## Biochemistry

776 Biological Sciences Building, 484 West 12th Avenue, 292-6771

**201 Survey of Biochemistry U 1**

An introduction to biochemistry emphasizing the history of the discipline, important concepts, and current areas of interest. Means.

Sp Qtr. 1 cl. Prereq or concur: Biology 114 and Chem 123.

**211 Elements of Biochemistry I U 3**

A survey of biochemistry in a two-quarter sequence stressing the qualitative rather than the quantitative approach. Scott.

Au Qtr. 3 cl. Prereq: Chem 102 or 122. Credit does not count toward a major in biochem. This course is available for EM credit.

**212 Elements of Biochemistry II U 3**

A continuation of 211.

Wi Qtr. 3 cl. Prereq: 211. Credit does not count toward a major in biochem.

**294 Group Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for different subject matter only.

**511 Introduction to Biological Chemistry U G 5**

An introductory course in biochemistry dealing with the molecular basis of structure and metabolism of plants, animals, and microorganisms.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Chem 123 and 242 or 252, and 2 qtrs of biological sciences. The organic chemistry requirement may also be satisfied by Chem 231 with a grade of at least C. This course is available for EM credit.

**512 Biochemistry of Physiological Processes U G 5**

The biochemical basis for physiological processes in higher animals; topics include digestion and absorption, respiration, blood function, kidney function, and endocrine control. Serif.

Sp Qtr. 5 cl. Prereq: 511 or equiv; a course in physiol recommended.

**521 Introduction to Biological Chemistry: Laboratory U G 5**

Assay techniques for chemical constituents and metabolic reactions of living cells.

Su, Au, Sp Qtrs. 2 cl, 2 3-hr labs. H521 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq for 521: 511 or 613 or equiv. Prereq for H521: 511 or 613 or equiv, and Chem 221.

**613 Biochemistry and Molecular Biology U G 4**

An introductory course in biochemistry and molecular biology developing in three quarters the molecular basis of structure and function of living cells. Behrman.

Au Qtr. 4 cl. Prereq: Chem 242 or 253, and 2 qtrs of biological sciences. Not open to students with credit for 511 without written permission of instructor. Not open to students with credit for 513. This course is available for EM credit.

**614 Biochemistry and Molecular Biology U G 4**

Continuation of 613. Serif.

Wi Qtr. 4 cl. Prereq: 613. This course is available for EM credit.

**615 Biochemistry and Molecular Biology U G 4**

Continuation of 614. Breitenberger.

Sp Qtr. 4 cl. Prereq: 614. This course is available for EM credit.

**635 Plant Biochemistry U G 5**

The biochemistry of plants, emphasizing the similarities and differences as compared to other life forms. Breitenberger and Sayre.

Au Qtr. 5 cl. Prereq: 511 or 614. Not open to students with credit for 631 prior to Wi Qtr 1988 or for Plnt Bio 635. Cross-listed in Plant Biology.

**693 Individual Studies U 2-5 G 2-10**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for undergrad credit and to a maximum of 40 cr hrs for grad credit. This course is graded S/U.

**694 Group Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****702 Molecular Genetics: Regulation of Gene Expression U G 3**

Transcription, translation, and regulation of gene expression in prokaryotes and eukaryotes; emphasis on concepts and experimental analysis of gene regulatory mechanisms. Marzluf.

Wi Qtr. 3 cl. Prereq: Mol Gen 701 or permission of instructor.

**708 Protein and Enzyme Laboratory U G 5**

Purification, characterization, and study of the physical and catalytic properties of enzymes and proteins. Ives and Swensen.

Wi Qtr. 3 4-hr labs. Prereq: 521 and 761; or equivs; or permission of instructor.

**710 Molecular Biology Laboratory U G 5**

Isolation of recombinant phage and phage DNA, subcloning of DNA fragments, restriction enzyme analysis, nucleic acid hybridization, RNA metabolism. Dean.

Sp Qtr. 3 4-hr labs. Prereq: 521 and 611 or 702; or equivs; or permission of instructor.

**721 Physical Biochemistry U G 3****721.01 Physical Biochemistry I**

Introduction to physical chemistry with emphasis on biological applications; designed for students in the life sciences. Scott.

Au Qtr. 3 cl. Prereq or concur: 511 or 613, Math 153 (254 recommended), and Physics 113 or 133; or permission of instructor.

**721.02 Physical Biochemistry II**

A continuation of 721.01. Scott.

Wi Qtr. 3 cl. Prereq 511 or concur: 614 and 721.01; or permission of instructor.

**721.03 Physical Biochemistry III**

A continuation of 721.02.

Sp Qtr. 3 cl. Prereq: 721.02. Not open to students with credit for 721.01 or 721.02 prior to Sp Qtr 1982.

**761 Advanced Biochemistry: Proteins U G 3**

An advanced treatment of protein biochemistry. Means.

Au Qtr. 3 cl. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 705, Chem 761, or Physchem 705 or 761. Cross-listed in Chemistry and Medical Biochemistry.

**762 Advanced Biochemistry: Enzymes U G 2**

An advanced treatment of enzymology. Patel.

Au Qtr. 2 cl. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 705, Chem 762, or Physchem 705 or 762. Cross-listed in Chemistry and Medical Biochemistry.

**763 Advanced Biochemistry: Membranes and Bioenergetics U G 2**

An advanced treatment of membranes and bioenergetics.

Wi Qtr. 2 cl. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 707, Chem 763, or Physchem 707, or 763. Cross-listed in Chemistry and Medical Biochemistry.

**765 Advanced Biochemistry: Physical Biochemistry U G 3**

Nuclear magnetic resonance, optical spectroscopy, and mass spectroscopy. Ross and Tsai.

Wi Qtr. 1 2 1/2-hr cl. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for Chem 765 or Physchem 765. Cross-listed in Chemistry and Medical Biochemistry.

**766 Advanced Biochemistry: Nucleic Acid Chemistry and Structure U G 2**

Reactions, synthesis, and conformations of nucleosides, nucleotides, oligonucleotides, and polynucleotides. Behrman.

Sp Qtr. 2 cl. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for Chem 766 or Physchem 766. Cross-listed in Chemistry and Medical Biochemistry.

**770 Protein Engineering U G 3**

Current research on genetic engineering of proteins for biotechnological and theoretical studies. Dean and Swenson.

Au Qtr. 2 1 1/2-hr cl. Prereq: 702, 761, and Microbiol 680 or Mol Gen 701.

**775 Biophysical Chemistry U G 3**

Techniques and principles of physical biochemistry, emphasizing chromatography, electrophoresis, centrifugation, ultrafiltration, and circular dichroism. Becktel.

Sp Qtr. 3 cl. Prereq: Introductory courses in biochemistry and physical chemistry or permission of instructor.

**781 Eukaryotic Genome: Structure and Expression U G 3**

Current research on the structure and expression of genes in higher eukaryotes. Johnson.

Au Qtr. 3 cl. Prereq: 702 or equiv. Not open to students with credit for Mol Gen 781. Cross-listed in Molecular Genetics.

**H783 Honors Research U 3-5**

A program of reading and research for each student with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the courses in biochem and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degrees BA or BS *with distinction* in biochem. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**785 Research Principles and Techniques U 2-5 G 2-10**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for undergrad credit and a maximum of 40 cr hrs for grad credit.

**795 Special Topics in Biochemistry U G 1-3**

Lecture/discussion in a seminar format of publications, current research, or research techniques in biochemistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 521 and 615; or permission of instructor. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**811 Advanced Topics in Molecular Genetics G 3**

An examination of the current research in molecular genetics by selective reading assignments and critical analysis during class discussion periods. Lambowitz and Marzluf.

Wi Qtr. 3 hrs arr. Prereq: 611 or 702, or Mol Gen 611. Not open to students with credit for Mol Gen 811. Repeatable to a maximum of 6 cr hrs. Cross-listed in Molecular Genetics.

**850 Seminar in Biological Chemistry G 2**

Au, Wi, Sp Qtrs. 1 or 2 cl. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2**

Students will present oral reports and lead discussion on research progress in specific areas of developmental biology.

1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Biochemistry, Molecular Genetics, Microbiology, Plant Biology, and Zoology. This course is graded S/U.

**999 Research in Biochemistry G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Biochemistry Program

See Ohio State Biochemistry Program.

## Biological Sciences: Interdisciplinary

105 Biological Sciences Building, 484 West 12th Avenue, 292-8772

**797 Interdepartmental Seminar G 1-5**

Two or more departments or colleges may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Permission of instructor. Repeatable by permission. This course is graded S/U.

## Biology

General Biology Annex, 1791 Neil Avenue, 292-9861

See also courses in Biochemistry, Entomology, Microbiology, Molecular Genetics, Plant Biology, and Zoology.

### 101 Introductory Biology I U 5

The major concepts and principles of biology and their interrelationships. Su, Au, Wi, Sp Qtrs. 3 cl, 13-hr rec/lab; or 2 1½-hr cl, 13-hr rec/lab. Prereq: Math 075 or 076 or 104 or Mathematics Placement Level R. Not open to students with credit for 108, 110, 113, or H115. Not intended for the student pursuing an undergraduate major in one of the biological sciences. Credit for this course will not count toward the minimum number of hours required for graduation if a student completes 107 and 108, or 113 and 114, or H115 and H116. This course is available for EM credit. BER/GEC/LAR course.

### 102 Introductory Biology II U 5

Continuation of 101.

Su, Au, Wi, Sp Qtrs. 3 cl or 2 1½-hr cl, 12-hr film/video presentation, 1 rec. Prereq: 101. Not open to students with credit for 107, 110, 114, or H116. Not intended for the student pursuing an undergraduate major in one of the biological sciences. Credit for this course will not count toward the minimum number of hours required for graduation if a student completes 107 and 108, or 113 and 114, or H115 and H116. This course is available for EM credit. BER/GEC/LAR course.

### 113 Biological Sciences: Energy Transfer and Development U 5

Exploration of biology and biological principles; topics include cell structure and function, reproduction and development of plants and animals, bioenergetics, genetics, and evolution.

Su, Au, Wi, Sp Qtrs. 3 cl or 1 1½-hr cl, 13-hr lab. Prereq: Chem 101 or 121. Not open to students with credit for H115. This course and 114 provide a comprehensive two-qr sequence in general biology. This course is available for EM credit. BER/GEC/LAR course. NS Admis Cond course.

### 114 Biological Sciences: Form, Function, Diversity, and Ecology U 5

Continuation of 113; diversity in structure, function, behavior, and ecology among prokaryotes and eukaryotes.

Au, Wi, Sp Qtrs. 4 cl, 13-hr lab. Prereq: 113. Not open to students with credit for H116. This course is available for EM credit. BER/GEC/LAR course. NS Admis Cond course.

### H115 Honors Biology I U 5

Fundamental concepts of modern biology; an in-depth study of life processes with close interaction with research faculty from the College of Biological Sciences and bio-professional fields.

Au Qtr. 3 cl, 22-hr labs. Prereq: Honors standing and performance on a pre-test with permission of instructor. Not open to students with credit for 113. This course and H116 are a two-qr sequence in general biology for beginning students. BER/GEC/LAR course. NS Admis Cond course.

### H116 Honors Biology II U 5

Continuation of H115.

Wi Qtr. 3 cl, 22-hr labs. Prereq: H115. Not open to students with credit for 114. BER/GEC/LAR course. NS Admis Cond course.

### 592 Workshop in Biology G 3

Each decimal subdivision repeatable to a maximum of 6 cr hrs. These courses are graded S/U.

#### 592.01 Workshop for Middle School Teachers: Part 1

Lecture and discussion of fundamental areas of biology as well as corresponding laboratory modules suitable for use in middle school life science classes.

Su Qtr. 2 wks, M-F, all-day cl. Prereq: Middle school or jr high school teachers employed in Ohio who teach life sci or general sci with a life sci component.

#### 592.02 Workshop for Middle School Teachers: Part 2

Participants develop, test, and perfect a new laboratory exercise; discuss and solve problems relating to use of materials for 592.01 and their new exercise.

Sp Qtr. 6 2-hr cl, 1 2-day workshop. Prereq: 592.01.

#### 592.03 Workshop in Biology for High School Teachers: Part 1

Lecture and discussion of fundamental areas of biology with corresponding laboratory modules suitable for use in high school life science classes.

Su Qtr. 2 wks, M-F, all day. Prereq: High school teachers employed in Ohio who teach life science or general science with a life science component.

#### 592.04 Workshop in Biology for High School Teachers: Part 2

Participants develop, test, and perfect a new laboratory exercise and discuss and solve problems relating to use of materials from 592.03 and their new exercise.

Su Qtr. 6 2-hr cl, 1 2-day workshop. Prereq: 592.03.

### 597 Biology of Human Diversity: Race, Gender, and Ethnicity U 5

Historical perspectives on contemporary issues in human biology and biocultural problems.

Wi Qtr. 3 cl, 1 2-hr rec. Prereq: 10 cr hrs of biological sciences course work and sr standing. GEC/LAR course.

## Biomedical Engineering

270 Bevis Hall, 1080 Carmack Road, 292-7152

### 600 Introduction to Biomedical Engineering U G 3

Introduction to the engineering aspects of life science, utilizing lectures from engineering, medicine, and life science.

Au Qtr. 3 cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for Elec Eng 670. Undergraduates may enroll with permission of instructor.

### Introduction to Sensory Biophysics

See SensBiop 601—Anatomy and function of sensory systems; psychophysical research methods; mathematical descriptions of information transfer; biophysical models.

### Advanced Mammalian Physiology II

See Physiol 601—First of a two-quarter sequence presenting the following areas of physiology: neuromuscular, heart and circulation, endocrine, brain and special senses, body fluids and kidney, respiration, digestion, temperature control, and metabolism.

### Advanced Mammalian Physiology II

See Physiol 602—Continuation of 601.

### Neurobiology

See Zoology 632—Survey of neuroscience covering neuronal cell physiology, properties of neural circuits, neural development, and functional organization of nervous systems.

### Introduction to Ultrasonics

See Eng Mech/Weld Eng 634—Ultrasonic waves in solids and fluids; ultrasonic generators and systems; physical ultrasonics; applications of ultrasonics.

### Radiation Biology

See Radiolgy 680—Effect of ionizing radiation in biological systems at the molecular, cellular, organ, organism, and community levels with special emphasis on medical implications and radiation safety.

### Analog Simulation

See Agri Eng 681—Principles of analog and hybrid simulation developed and applied to engineering problems in agricultural systems.

### Introduction to Design in Biomedical Engineering

See Mech Eng 687—Introduction of engineering students to design problems in biomedical engineering; analysis in biomechanics, biofluid mechanics, diffusion, and elementary physiology.

### 631 Fundamentals of Biomaterials U P G 3

Review of basic concepts of materials science; biocompatibility and biological reactions to implanted materials; natural biomaterials and synthetic materials used in biological applications.

Wi Qtr. 3 cl. Prereq: Statics, Strength of Materials, Physiology or permission of instructor.

### 692 Biomedical Engineering Workshop G 3

Workshop focused on a selected topic in Biomedical Engineering.

Su Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

### 694 Group Studies in Biomedical Engineering U G 1-5

Provides groups of students opportunities to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### Special Problems: Advanced Dental Materials

See Dent 700.08—The science of dental materials.

### 721 Biological Transport G 3

Mechanisms and models of solute and water transport in living systems, including free and facilitated diffusion, active transport, cell membranes, and equilibrium and nonequilibrium thermodynamics.

Sp Qtr. 2 1½-hr cl. Prereq: Math 255 and Chem 125 or equiv; Chem 531 and 532 or Mech Eng 501 and 502 or equiv.

### 733 Hard-Tissue Biomaterials U P G 3

Structure and material properties of musculoskeletal materials and the synthetic materials used in musculoskeletal reconstruction.

Sp Qtr. 2 1½-hr cl.

**752 Clinical Engineering U G 3**

Classroom and hospital investigation of clinical engineering, including clinical instrumentation, medical ethics, law, economics, and safety.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 771 or permission of instructor. Not open to students with credit for Elec Eng 772.

**Design and Analysis of Comparative Biomedical Research I**

See Prev Med 764—Theory and application of basic statistical concepts as they affect design, analysis, and interpretation of veterinary biomedical research.

**Biomechanics**

See Eng Mech 770—Discrete mass and continuum mechanics; description of biological materials; biodynamics of limb and gross body motions; various models for injury to head, neck, and torso.

**Instrumentation, Neurophysiology, Clinical Aspects of Electromyography**

See Phys Med 770—In-depth study of the instrumentation and correlation of neurophysiology and clinical aspects of electromyography. For PhD candidates only.

**771 Biomedical Instrumentation G 4**

Study of instruments and measurement techniques used in obtaining data from living systems.

Wi Qtr. 1 2-hr and 1 3-hr cl plus 5 3-hr labs. Prereq: Grad standing in Biomed E; Math 255 or 415 or equiv, Physics 133 or equiv, or Elec Eng 550, or permission of instructor. Not open to students with credit for Elec Eng 771.

**Rheology of Fluids**

See Chem Eng 775—Principles of rheology including the characteristics of non-Newtonian materials, measurements, rheological equations of state, viscometric flows, and applications to the flow of industrial materials.

**Veterinary Physiology**

See Vet Phys 790—Comparative electrocardiography.

**Veterinary Physiology**

See Vet Phys 791—Comparative hemodynamics and cardiovascular sound.

**Veterinary Physiology**

See Vet Phys 792—Advanced comparative cardiovascular physiology with emphasis upon circulatory response to stress of various congenital and acquired cardiovascular defects.

**793 Individual Studies in Biomedical Engineering U G 1-12**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**Interdepartmental Seminar—Philosophy of Clinical Practice for Biomedical Engineers**

See Internal Medicine 797B—Introduction to the physicians, philosophy and techniques in diagnosing and treating various medical problems.

**Biological System Modeling I**

See Elec Eng 870—Consideration of current literature in the area of biological system modeling; cardio-vascular and pulmonary systems; computer implementation of models.

**Biological System Modeling II**

See Elec Eng 871—Modeling of such biological systems as thermoregulatory or renal for parameter identification; digital and analog computer laboratory implementation.

**Biomedical Systems Modeling of Man-Machines**

See Elec Eng 872—Systems theory applied to the engineering aspects of the human eye-hand tracking interface comparing hybrid computer simulation with experimental data.

**881 Seminar in Biomedical Engineering G 0-1**

Weekly seminars by students and faculty.

Au, Wi, Sp Qtrs. 1 cl. Required of all biomedical students. Final grade awarded upon completion of 3 quarters. All biomedical students must complete the following series of 881 classes for 2 hrs credit.

**881.01 Seminar in Biomedical Engineering I G 0**

**881.02 Seminar in Biomedical Engineering II G 0**

1 hr cl. Prereq: 881.01.

**881.03 Seminar in Biomedical Engineering III G 1**

1 hr cl. Prereq: 881.02.

**881.04 Seminar in Biomedical Engineering IV G 0**

1 hr cl. Prereq: 881.03.

**881.05 Seminar in Biomedical Engineering V G 0**

1 hr cl. Prereq: 881.04.

**881.06 Seminar in Biomedical Engineering VI G 1**

1 hr cl. Prereq: 881.05.

**894 Group Studies in Biomedical Engineering G 1-18**

Provides graduate students with an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**999 Research in Biomedical Engineering G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**Biophysics**

105 Biological Sciences Building, 484 West 12th Avenue, 292-8772

**Introduction to Sensory Biophysics**

See SensBiop 601—Anatomy and function of sensory systems; psychophysical research methods; mathematical descriptions of information transfer; biophysical models.

**Introduction to Biophysics**

See Micrbiol 603—Introductory course in the approach to biological phenomena from conceptual viewpoint to viewpoint of physical sciences; molecular to organismic levels of biological hierarchical structure.

**Introduction to Quantum Biology**

See Micrbiol 641—An introduction to applications of elementary quantum mechanics to problems in biology; conceptual rather than mathematical aspects are stressed.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**702+ Advanced Experimental Methods in Biophysics U G 1-3**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**793 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**795 Seminar in Biophysics U G 1-2**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**999 Research in Biophysics G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**Biostatistics**

141 Cockins Hall, 1958 Neil Avenue, 292-2866

**605\* Applied Survival Analysis U G 3**

Techniques for analyzing censored data including: life table and product limit estimators; parametric estimation; K-sample nonparametric tests; parametric and semiparametric regression.

Wi Qtr. 3 cl. Prereq: Stat 426, 521, 529, or equiv.

**610\* Statistical Bioassay U G 3**

Direct assays, dose-response relationships, parallel line and slope ratio assay, special statistical designs in assay, Bayesian bioassay; examples.

Sp Qtr. 3 cl. Prereq: Stat 426 or 521, and Pharmacol 600; or permission of instructor.

**615 Design and Analysis of Clinical Trials U G 3**

Design, monitoring, and analysis of clinical trials; includes protocol development, randomization schemes, sample size methods, and ethical issues.

Au Qtr. 3 cl. Prereq: Stat 528 and 529, or equivalents.

**805+\* Survival Analysis I G 3**

Counting process approach to life history data: Nelson-Aalen estimators; product limit estimators; K-sample estimators.

Au Qtr. Prereq: Stat 722 or permission of instructor.

**806+\* Survival Analysis II G 3**

Parametric models, semiparametric proportional hazards regression, additive hazards regression, multivariate survival models.

Wi Qtr. 3 cl. Prereq: Biostat 805.

**865+\* Analysis of Discrete Data G 3**

Theory of techniques for the analysis of discrete data including: two-way and multidimensional tables; logistic regression; loglinear models; chi-squared tests; numerical methods.

Sp Qtr. 3 cl. Prereq: Stat 622, 742, or permission of instructor.

**882 Advanced Topics in Biostatistics G 3**

Selected topics in biostatistics.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**999 Research in Biostatistics G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Black Studies

486 University Hall, 230 North Oval Mall, 292-3700

See also Hausa, Swahili, Yoruba, and Zulu.

**101 Introduction to Black Studies U 5**

Introduction to the impact of broad historical forces such as colonization and capitalist slavery on race relations; the interdependence of ideology and social structure.

Au, Wi, Sp Qtrs. 3 cl, 2 1-hr labs. BER/GEC/LAR course.

**121 African Civilizations to 1870 U 5**

Exploration of the political, social, and economic history of precolonial African civilizations, using a variety of interdisciplinary approaches and materials.

Au, Wi Qtrs. 5 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for History 121. Cross-listed in History. BER/GEC/LAR course.

**122 African Civilizations, 1870 to the Present U 5**

Exploration of the political, social, and economic history of the colonial and independent African countries, using a variety of interdisciplinary approaches and materials.

Wi, Sp Qtrs. 5 cl. Prereq: 121 or History 121. Not open to students with credit for History 122. Cross-listed in History. BER/GEC/LAR course.

**130 Africa and the World U 5****130.01 African History**

A general introduction to the history of Africa from prehistoric to recent times.

Au Qtr. 5 cl. SS Admis Cond course.

**154 Introduction to African American Literature U 5**

Survey of the literature of African descendants in the United States from 1750 to 1915.

Au Qtr. 5 cl. Prereq: English 110 or 111 or equiv. BER/GEC/LAR course.

**161 Black Psychology: New Behavioral Perspectives U 5**

Introduction to black psychology; emphasis on theories, issues, and applications of the discipline.

Sp Qtr. 2 2-hr cl. SS Admis Cond course.

**180 Fundamentals of Black Dance U 5**

Fundamentals and techniques of contemporary black dance.

Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: Permission of instructor. VPA Admis Cond course.

**Social Problems**

See Sociol 202. Offered in cooperation with Black Studies.

**Economics of the Ghetto**

See Econ 206. Offered in cooperation with Black Studies.

**218 Black Community Development U 5**

Problem solving and field work in the local urban black community.

Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 10 cr hrs.

**222 Economic Problems of Black America U 5**

Economic problems of black Americans including economic history, job opportunities, income, consumer purchases, housing, business enterprises.

Sp Qtr. 5 cl. Prereq: 5 cr hrs in econ or permission of instructor. SS Admis Cond course.

**223 History of Afro-Americans in the Age of Slavery U 5**

Origins of modern slavery; its development in the U.S.; the evolution of Afro-American life and culture from 1619 to the end of the Civil War.

Au Qtr. 5 cl. Not open to students with credit for 345, or History 223 or 260. Cross-listed in History. BER course.

**224 History of Afro-Americans from Emancipation to the Present U 5**

The rise of debt peonage among blacks; the formation of the northern ghetto; the Civil Rights Movement and beyond.

Wi Qtr. 5 cl. Not open to students with credit for 238 and 345, or History 224 or 260. Cross-listed in History. BER course.

**230 The Black Woman: Her Role in the Liberation Struggle U 3**

The political role of the black woman in the struggle for black freedom; examination of changing laws and customs affecting the status of black women.

Au, Wi Qtrs. 3 cl. GEC course.

**244 Survey of African and African-Derived Music in the Western World U 3**

An introduction to traditional African music and its role in the history and development of Afro-American music with its concomitant socio-political milieu.

Sp Qtr. 3 cl. Not open to students with credit for Music 244. Cross-listed in Music. BER/LAC course. VPA Admis Cond course.

**248 Leadership and Mass Movements in Contemporary Africa U 5**

A survey of modern African leaders, their philosophies and methods, and a study of the historical, geographical, economical, and political factors that gave rise to the drive for national independence after 1945.

Wi Qtr. 5 cl. BER course. SS Admis Cond course.

**251 Introduction to African Literature U 5**

An assessment of the oral prose tradition and written prose of African literature; specific emphasis placed on student reading from primary sources.

Wi Qtr. 5 cl. BER/GEC/LAR course.

**254 Themes in African American Literature U 5**

Survey of themes in the literature of African descendants in the United States from 1915 to present.

Wi Qtr. 5 cl. BER/GEC/LAR course.

**261 Black-White Behavior U 5**

A survey of the social significance of important behavioral elements affecting black-white relations.

Sp Qtr. 5 or 2 2-hr cl. SS Admis Cond course.

**271 Contemporary Black Drama U 5**

A literary analysis and discussion of plays by black playwrights in recent times.

2 2-hr cl. Prereq: Permission of instructor. VPA Admis Cond course.

**272 Theatre Practice in Black Drama U 5**

Local performance of selected black drama.

2 2-hr cl. Prereq: Permission of instructor. VPA Admis Cond course.

**Introduction to Afro-American Literature**

See English 281. Offered in cooperation with Black Studies.

**282 Major Themes in African and Afro-American Cultures and Civilizations U 5**

A broad and comprehensive survey of the cultures and heritage of Africans and Afro-Americans.

5 cl. BER/LAC/LAR course. SS Admis Cond course.

**290 Workshop in Visual Communication U 5**

The study, analysis, and evaluation of the visual environment of the black community.

2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**294 Group Studies U 1-5**

Groups of students are given an opportunity to pursue special studies not otherwise offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**322 Black Consumer Economics U 5**

Economic problems faced by black Americans in their purchases of goods and services.

Wi Qtr. 5 cl. Prereq: 222 and 5 cr hrs of econ; or permission of instructor.

**326 Black Americans and the Legal System U 5**

An examination of the role of the legal system in the social and political dynamics of blacks in American society.

Sp Qtr. 5 cl.

**327 Introduction to African Politics U 5**

Examination of dynamics of nation-building in African countries in transition from colonial dependencies to modern nation-states.

Au Qtr. 5 cl.



**338† African Territories as Nation-States: Selected Case Studies U 5**

Case studies of selected African territories gaining independence in the aftermath of the Second World War.  
5 cl.

**352 Afro-American Cultural and Intellectual Tradition U 5**

Salient themes in the experience of the black man in America including slavery and bondage, emancipation, integration, and revolt.  
Sp Qtr. 5 cl.

**361 Psychology of the Black Experience U 5**

An analysis of personality theories commonly applied to black Americans and the black experience.  
Au Qtr. 5 or 2 2-hr cl.

**367 Second Writing Course U 5**

Prereq: English 110 or 111 or equiv, and soph standing. GEC/LAR courses.

**367.02 African-American Theatre History**

Examination of the aesthetic and sociological evolution in America of African-American theatre and its literature.

Au Qtr. 5 cl. Not open to students with credit for Theatre 367.02. Cross-listed in Theatre.

**367.03 African-American Voices in U. S. Literature**

Discussion, analysis, and writing about issues presented through the diverse voices of African-American literature.

Wi Qtr. 2 2-hr cl. Not open to students with credit for English 367.03. Cross-listed in English.

**367.04 Black Women Writers: Text and Context**

Writing and analysis of black women's literary representations of issues in United States social history.

Sp Qtr. 2 2-hr cl. Not open to students with credit for Wom Stds 215 or 367.04. Cross-listed in Women's Studies.

**375 Early African-American Art U 5**

The work of black African-American artists prior to 1920.  
2 2-hr cl.

**American Ethnic Relations**

See Sociol 380. Offered in cooperation with Black Studies.

**Comparative Race Relations**

See Sociol 480. Offered in cooperation with Black Studies.

**527 Pan-Africanism and Nationalism U G 5**

Pan-Africanism and nationalism in the development of Africa.  
Wi Qtr. 5 cl.

**530† African Political Systems: A Comparative Analysis U G 5**

A comparative examination of problems of nation-building and national integration faced by selected African nations in the postcolonial period.  
Wi Qtr. 5 cl.

**549 Historical Evolution of the Black Community U G 5**

The political, social, and economic background of the contemporary American black community.

Su, Sp Qtrs. 5 cl.

**551† Selected Topics in Afro-American and Related Literature U G 5**

Topics selected will relate to specific interests of enrolled students, who will develop an intensive analysis of the topic of their choice.

5 cl. Prereq: 251 or 351. GEC/LAR course.

**552 Contemporary Afro-American Culture U G 5**

Afro-American culture in 20th-century America.

Au Qtr. 2 2-hr cl.

**571 Images of Black People in Media Production U G 5**

The historical background of black drama in the media; development of new models for monitoring programming; the writing and production of drama.

Wi Qtr. 2 2-hr cl. Prereq: 271 or permission of instructor.

**580† Contemporary Afro-American Leaders U 5**

The evolution of black leadership after World War II, from non-violence to black nationalism.

Wi Qtr. 5 cl.

**581 Philosophy in Contemporary African Literature U 5**

Discussion of African social and political thought as presented by selected African novelists.

Sp Qtr. 5 cl. BER/LAC course.

**630 Black Political Movements and Organizations U G 5**

Analysis of black political movements and organizations from slavery to contemporary times.

Au Qtr.

**633 Black Community Politics: Welfare and Poverty U G 5**

Welfare and poverty as social, economic, and political problems of the black community.

Sp Qtr.

**643 History of Islam in Africa U G 5**

Examination of the history and spread of Islam in Africa and its impact on African social, economic, and political institutions.

Wi Qtr. 2 2-hr cl. Prereq: 121 or 122, or History 121 or 122; or grad standing. Not open to students with credit for History 643. Cross-listed in History.

**672 Central African History U G 5**

Specific themes on central African history.

Au Qtr. 3 cl. Prereq: 122 or History 122 or grad standing or permission of instructor. Not open to students with credit for 636 or History 672. Cross-listed in History.

**673 West African History U G 5**

An examination of the processes of state formation, trade, and civilization in Africa's Sudanese and Guinean regions.

Au Qtr. 2 2-hr cl. Prereq: 122 or History 122 or grad standing or permission of instructor. Not open to students with credit for 538 or History 673. Cross-listed in History.

**674 Africa Before Colonial Rule U G 5**

Examination of pre-colonial political, economic, and social systems, including material culture and agriculture.

Au Qtr. 2 2-hr cl. Prereq: 122 or History 122 or grad standing or permission of instructor. Not open to students with credit for 611 or History 674. Cross-listed in History.

**675 History of South Africa U G 5**

An examination of the political and social developments in South Africa from the nineteenth century to the present.

Sp Qtr. 2 2-hr cl. Not open to students with credit for 537 or History 675. Cross-listed in History.

**690 African-American Children and Youth U G 5**

Study of the social-psychological development of African-American children.

Wi Qtr. 2 2-hr cl. Prereq: Jr, sr, or grad standing.

**691 Black American Family U G 5**

History of the black American family: origins, myths, and realities.

Au, Wi Qtrs. 2 2 1/2-hr cl. Prereq: 101 or permission of instructor.

**693 Individual Studies U G 1-5**

Individual reading or research projects by special agreement between instructor and student.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**712 Development of the Black Community U G 5**

Rural and urban development and their effects on black people in America.

Wi Qtr.

**718 Citizen Participation U G 5**

Assessment and application of techniques of organization and action in the black community.

Wi Qtr. Repeatable to a maximum of 15 cr hrs.

**721 Economics of Discrimination U G 5**

The economics of racial discrimination with emphasis on black Americans.

Sp Qtr. Prereq: 10 cr hrs of econ, grad standing, or written permission of instructor.

**725 Political Development of Sub-Saharan Africa U G 5**

The process and problems of political change in Sub-Saharan Africa.

Wi Qtr.

**738 African Protest Movements U G 5**

A socio-historical examination of African armed revolts.

Wi Qtr.

**751 Studies in the African Novel U G 5**

Wi Qtr.

**752 Readings in African-American History U G 5**

Readings in the evolution of black culture, economics and family life, race relations, and the emergence of class stratification within the black community. Wi Qtr. 1 2 1/2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs, including cr hrs in History 752. Cross-listed in History.

**754 Research Methods in Black Studies G 5**

Analysis and measurement of various forms of inequality, distortions, stereotypes, and omissions, primarily in the areas of race and ethnicity that relate to African people.

Au Qtr. 2 2-hr cl. Prereq: Grad standing.

**762 Mental Health and the Black Community U G 5**

Theoretical and practical approaches to the problems of mental health in the black community.

Au Qtr. Prereq: 15 cr hrs in social/behavioral sciences or permission of instructor.

**Racial and Ethnic Differentiation**

See Sociol 780. Offered in cooperation with Black Studies.

**781 Topics in African Political Philosophy U G 5**

Post-colonial African conceptions of power, freedom, alienation, and cultural identity.

Sp Qtr. Prereq: Grad standing or written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**782 Modern Black Political Thought U G 5**

The historical development of black political thought from the 19th century to the present.

Sp Qtr. 5 cl.

**H783 Honors Research U 3-5**

A program of individual study for undergraduate honors students; requires individual conferences, reports, presentations, and oral defense of an honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing and a cumulative pt-hr ratio of at least 3.50 in all courses in black st. Open only to candidates for degrees with distinction in black st. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**833 Seminar in U.S./African Relations G 5**

A critical analysis of selected theories of American foreign policy, with special emphasis on Africa.

Sp Qtr. Repeatable to a maximum of 10 cr hrs.

**851 Afro-American Literary Movements: Black Revolutionary Aesthetic G 5**

A critical evaluation of black literature since 1960 in relation to the evolution of a black revolutionary aesthetic.

Au Qtr.

**854 Seminar in Major Black Authors G 5**

Prereq: Permission of instructor.

**860 Seminar in Black Literature G 5**

Topics in African, Afro-American, and Caribbean literature.

Sp Qtr. Repeatable to a maximum of 10 cr hrs.

**865 Black Role Models: Racism and Sexism G 5**

Effects of racism and sexism on the various role models that are prevalent in the black community emphasizing consequences and alternatives.

Sp Qtr. Prereq: 15 cr hrs in social/behavioral sciences or permission of instructor.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**998 Research in Black Studies: Thesis G Arr**

Research for the thesis.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**Botany**

See Plant Biology.

**Bulgarian**

232 Cunz Hall, 1841 Millikin Road, 292-6733

**101+ Elementary Bulgarian I**

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Au Qtr. 5 cl.

**101.51 Individualized Track U 1-5**

Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**102+ Elementary Bulgarian II**

Development of oral and written language skills.

Prereq: 101 or 101.01 or 5 cr hrs of 101.51. GEC/LAR courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Wi Qtr. 5 cl.

**102.51 Individualized Track U 1-5**

Prereq: B- or above in 101 or 101.01, or 5 cr hrs of 101.51, or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.

**103+ Intermediate Bulgarian I**

GEC/LAR course.

**103.51 Individualized Track U 1-5**

Prereq: B- or above in 102.01 or 5 cr hrs of 102.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor.

**104+ Intermediate Bulgarian II**

GEC/LAR course.

**104.51 Individualized Track U 1-5**

Continuation of 103; development of the four skills.

Prereq: 5 cr hrs of 103.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor.

**111+ Intensive Intermediate Bulgarian U 10**

Readings, oral and written practice, grammar review.

Sp Qtr. 10 cl. Prereq: 102 or equiv. Equiv to the 3rd and 4th courses of the foreign language sequence. GEC/LAR course.

**405+ Advanced Bulgarian I****405.51 Individualized Track U 1-5**

Continuation of 104.51; development of the four skills.

Prereq: 5 cr hrs of 104.51 or 111 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 104.51 and 405.51 concurrently with permission of instructor.

**407+ Advanced Bulgarian II****407.51 Individualized Track U 1-5**

Continuation of 405.51; development of the four skills.

Prereq: 5 cr hrs of 405.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

## Business Administration

126 Hagerty Hall, 1775 College Road, 292-2715

### 100 College of Business Survey U 1

Academic requirements and resources; University policies college procedures and resources; student rights and responsibilities; academic areas of specialization; careers in accounting and business administration. King.

Au Qtr. 2 cl. H100 (honors) may be available to students enrolled in an honors program. Prereq: 1st qtr freshman standing in direct enrollment program in BUS. Not open to students with credit for UVC 100.

### H101 Business and Society U 5

A critical examination of the socioeconomic framework of business; seminar discussion of selected readings.

Sp Qtr. 3-5 cl. Prereq: Fresh or soph standing, and approved application for College of Business Honors Program. SS Admis Cond course.

### 201 Business Career Planning U 2

Exploration of business careers through self-assessment, informational interviews, and employer presentations; information on co-ops/internships and job search strategies.

Au, Wi, Sp Qtrs. 2 1-hr cl. H201 (honors) may be available to students enrolled in an honors program. Prereq: Soph standing and enrollment in the College of Business, others by permission of instructor. 3.40 CPHR required for honors version.

### 493 Individual Studies U 1-10

Individual study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

### 494 Group Studies U 1-10

Group study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

### 501 Career Development, Job Search Preparation, and Transition-to-Work for Business Students U 1

Practical techniques of how to conduct an effective job search and to make a successful transition into a business-related position.

Au Qtr. 1 cl. Prereq: Jr standing and enrollment in the College of Business.

### 555 Introduction to International Business U 4

Basic coverage of world trade and investment problems, and introduction to multinational corporation strategies and the various types of environments in which they do business.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Econ 400 (3.4 cumulative pt-hr ratio required for honors version). H555 may be available to students enrolled in an honors program.

### 655+ The Japanese Business Environment U G 3

Study of the relationship between business practices and business environments in the Japanese context; comparative reference to these same relationships in other countries.

Au Qtr. 2 2-hr cl. Prereq: Jr or sr or grad standing.

### 656+ Doing Business with the Japanese U G 4

In-depth study of operational and strategic issues involved in interaction with Japanese firms and markets; competitive, vendor-customer, and collaborative relations.

2 2-hr cl. Prereq: Jr or sr or grad standing, 555 or 655 or permission of instructor.

### 689 Professional Experience in Business U 0

Students complete a co-op or internship assignment in private industry or for a government agency; assignment is supervised by the employer and monitored and evaluated by the Professional Experience Program. Whitfield.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of the Director of Professional Experience Program. Repeatable. This course is graded S/U.

### 693 Individual Studies U G 1-6

Individual study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 694 Group Studies U G 1-6

Group study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 697 Study at a Foreign Institution U G 1-15

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

### 698 Study Tour U G 1-15

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

#### 698.01 Domestic

#### 698.02 Foreign

### 750 Resolving Social Conflict G 4

A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflict. Lewicki.

1 4-hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in City and Regional Planning and Natural Resources.

### H783 Honors Research U 1-5

Special topics research in business administration; research evaluated through papers, thesis, and/or special examinations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

### 790 Teaching Business Students G 3

Preparation for business instruction at the undergraduate level; focuses on development of college business teachers through practice-centered inquiry.

Su Qtr. 1 cl. Prereq: Ph.D. student enrolled in College of Business. Limited to 20 students. This course is graded S/U.

### 798 International Business Policy and Strategy U G 4

Analysis and simulation of major policy decisions in the context of international business; emphasis on consideration of international business.

Wi, Sp Qtrs 2 2-hr cl. Prereq: Approved application for BSBA in international business, Bus Adm 555, Bus-Fin 725, and Bus-Mktg 757; or written permission of instructor.

### 799 Business Policy U G 4

Analysis of policy/strategy management issues in the context of entire firms and their industries, using professional tools and concepts helpful in strategy formulation and implementation.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H799 (honors) may be available to students enrolled in an honors program or by permission of college office. Prereq: Bus-Fin 510 and 620, Bus-Mgt 630, Bus-Mktg 650, Bus-MHR 701, and registration for final qtr BSBA program prior to graduation, others by permission of instructor. First class attendance required.

### 856 Introduction to Multinational Business G 4

Introduction to the environment of international business and to the operations of the multinational firm, including an understanding of the dimensions of international trade and investment and their importance to the US economy and business firms. Ajami.

Au, Wi Qtrs. 2 2 1/2-hr cl, arr. field research.

### 857 International Business Policy and Strategy G 4

Comprehensive study of policy and strategy formulation of firms in an international context with simulated cross-cultural negotiations, and the development of an international strategy for a local firm. Ajami.

Sp Qtrs. 2 2 1/2-hr cl. Prereq: 555 or 856 or equiv.

### 893 Individual Studies G 1-6

Individual study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 894 Group Studies G 1-6

Group study projects in selected interdisciplinary topics in business administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 998 Research in Business Interdisciplinary: Thesis G Arr

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

### 999 Research in Business Interdisciplinary: Dissertation G Arr

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Business Administration: Finance

318 Hagerty Hall, 1775 College Road, 292-5026

### 220 Personal Finance U 3

Budgeting, credit, borrowing money, bank relationships, savings, insurance, real estate, stocks and bonds, income taxes, social security, annuities, wills, trusts, estates, and taxes.

Su, Wi Qtrs. Prereq: 2nd yr standing. Not open to students in the College of Business majoring in either accounting or finance.

### 493 Individual Studies U 1-10

Individual study projects in selected areas in finance.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

### 494 Group Studies U 1-10

Group study projects in selected areas in finance.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 or hrs.

### 498 Study Tour U 1-15

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

#### 498.01 Domestic

#### 498.02 Foreign

### 510 Legal Environment of Business U 4

An introduction to American legal institutions and sources of law and an analysis of basic concepts of public and private law related to business decisions.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H510 (honors) may be available to students enrolled in an honors program. Prereq: 3rd yr standing. Not open to students with credit for 511.

### 612 Legal Aspects of the Distributive Processes U 4

Problems arising out of the distribution of consumer goods; obligations of sellers, including product liability; analysis of selected pricing, consumer-protection, and commercial paper statutes.

Au, Wi Qtrs. Prereq: 510 or 511 or equiv.

### 613 Legal Environment of Institutional Management U G 4

Examination of business associations, emphasizing the legal aspects of the management process and the societal influence and responsibilities of the corporation.

Sp Qtr. 2 2-hr cl. Prereq: 510 or 511 or equiv.

### 614 Managerial Aspects of Contract Law U G 4

Review of contract law with emphasis on common law and changes by legislation.

Sp Qtr. 2 2-hr cl. Prereq: 510 or 511 or equiv.

### 620 Business Finance U G 4

Introduction to financial management of business firms; financial analysis, planning and control; working capital management; capital investment decisions and required rates of return; capital structure decisions and sources of financing.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H620 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: Econ 200 and 400, or equivalents; and Accting 201 or 212 or equiv. This course is available for EM credit.

### 640 Insurance and Risk U G 4

Principles and practices of insurance and risk management, including personal, business, and social viewpoints in regard to insurance for life, health, property, and liability risks.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Econ 200 and 400, or equivalents.

### 670 Real Estate and Urban Land Economics U G 4

Introduction to urban land economics and real estate markets; topics include land use, property taxation, income taxation, and property rights.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Econ 200 and 400, or equivalents.

### 693 Individual Studies U G 1-6

Individual study projects in related areas in finance.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

### 694 Group Studies U G 1-6

Group study projects in selected areas in finance.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs.

### 720 Corporation Finance U G 4

A critical study of the field of corporation finance from an economic point of view.

Su Qtrs. 2 2-hr cl. Prereq: Accting 711 or equiv; and Econ 400 or equiv. Open only to students preparing for grad work in business. Not open to students in structured MBA.

### 721 Corporate Finance U G 4

Effects of projects and financial policy on stockholder wealth; capital budgeting, project cost of capital, dividend policy, debt policy, leasing policy, and option pricing.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 620 or equiv (H620 and 3.4 CPHR required for honors version). H721 may be available to students enrolled in an honors program.

### 722 Investment Management U G 4

Investment objectives; types of investments and their relative merits; security prices and yields; investment programs; and taxes.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 620 or equiv.

### 723 Investment Analysis U G 4

Methods of investment analysis; analysis of investment data; principles and standards for selection of specific investment; portfolio management.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 722 or equiv.

### 724 Stock Market U G 5

Practices, procedures, and evaluations relating to buying and selling securities in the organized security markets.

Su, Au, Wi Qtrs. 3 2-hr cl. Prereq: 722 and 3.20 CPHR or permission of instructor.

### 725 International Finance U G 4

The international financial environment; management of financial risks inherent with international business; problems of implementing corporate finance principles overseas; financial aspects of parent-subsidiary relationships.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 555 and 620 or equivalents.

### 726 Management of Financial Institutions U G 4

Overview of the role of financial institutions; study of asset and liability management in commercial banks and savings institutions; cases and simulation.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 620 and Econ 520 or equivalents.

### 729 Cases in Managerial Finance U G 4

Analysis of qualitative and quantitative financial factors involved in managerial decisions in actual business cases.

Sp Qtrs. 2 2-hr cl. Prereq: 721 or equiv.

### 741 Life and Health Risk Management U G 4

Management of risks involving health or death; employee benefit programs for corporations, non-profit organizations, and government institutions; the life and health insurance industry.

Wi Qtr. 2 2-hr cl. Prereq: 640 or equiv.

### 749 Property and Liability Risk Management U G 4

Management of risks involving property damage or legal liability for businesses, hospitals, and government institutions; identification of resources for managing these risks.

Sp Qtr. 2 2-hr cl. Prereq: 640 and Bus-Mgt 330 or equiv or permission of instructor.

### 771 Real Estate Investment Analysis U G 4

Feasibility and market analysis with consideration of property and income taxation and urban land developments.

Wi Qtr. 2 2-hr cl. Prereq: 620 or equiv or permission of instructor.

### 772 Real Estate Finance U G 4

Sources and methods of obtaining funds for real estate investment; financial institutions, legal considerations, the construction industry and cycles, and financing policies, practices, and experiences.

Sp Qtr. 2 2-hr cl. Prereq: 620 or equiv or permission of instructor.

### 773 Real Estate Valuation U G 4

Professional valuation as a guide to business decisions; valuation theory and procedures; factors influencing real estate values, and the selection and analysis of data.

Au Qtr. 2 2-hr cl. Prereq: Econ 200 or equiv or permission of instructor.

### 774 Income Property Valuation U G 4

The value-creating attributes of investment properties; methodologies of income-property valuation and investment analysis.

Sp Qtr. 2 2-hr cl. Prereq: Econ 200 or equiv or permission of instructor.

**775 Real Estate Law U G 4**

Legal aspects of real estate transactions and documents (deeds, mortgages, and leases) and selected elements of the law of real estate brokerage.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 510 or equiv or permission of instructor.

**H783 Honors Research U 1-5**

Special topics research in finance, business law, insurance and risk, and/or real estate; research evaluated through papers, thesis, and/or special examinations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**821 Seminar in Corporate Financial Analysis G 4**

Conceptual foundations of corporate financial decisions with an emphasis on valuation review and evaluation of selected empirical research in financial economics.

Wi Qtr. 2 2-hr cl. Prereq: MBA 810, 811, or permission of instructor.

**822 Security Markets G 4**

A critical study of the markets for listed and unlisted securities and the factors influencing security prices.

Au Qtr. 2 1½-hr cl. Prereq: Permission of instructor.

**823 Special Topics in Investment Management G 4**

In-depth analysis of selected investment topics such as options markets, futures markets, convertible securities, effects of taxes and inflation on interest rates, term structure of interest rates, and modern portfolio theory.

Sp Qtr. 2 2-hr cl. Prereq: 822 or permission of instructor.

**824 The Stock Market G 5**

Practices, procedures, and evaluations for managing equity portfolios.

Su, Wi, Sp Qtrs. 3 2-hr cl. Prereq: 822.

**825 International Finance G 4**

The international financial environment, management of financial risks inherent with international business; problems of implementation corporate finance principles overseas; financial aspects of parent-subsidiary relationships.

Wi, Sp Qtr. 2 2-hr cl. Prereq: 822 and 823 recommended; permission of instructor for PhD students.

**826 Financial Institutions G 4**

Financial management of commercial banks and savings institutions; review, analysis and evaluation of pertinent literature and research; readings and cases.

Au Qtr. 2 2-hr cl. Prereq: MBA 810 and 811 or permission of instructor.

**841\* Risk Management and Insurance G 4**

Principles of risk management and insurance; overview of insurance coverages and employee benefit programs; and risk management for businesses, hospitals, and government institutions.

2 2-hr cl. Prereq: Permission of instructor.

**843 Risk Management: Property and Liability Risks G 4**

Management of risks involving damage to property and losses imposed by the legal environment and resources for businesses, hospitals, and government institutions to manage these risks.

2 2-hr cl. Prereq: 841.

**845 Risk Management: Benefit Programs G 4**

Management of employee benefit programs for businesses, hospitals, and government institutions; alternatives for funding and claims control; and social insurance systems, including social security.

2 2-hr cl. Prereq: 841.

**868 Contemporary Employment Practices and the Law G 4**

An examination of individual rights in the workplace; unjust discharge, employee privacy rights, and employer liability for intentional injuries; equal employment opportunity law; emphasis on recent legal developments.

Au Qtr. 2 2-hr cl. Prereq: Bus-MHR 612 or permission of instructor. Not open to students with credit for Bus-Adm 694C or Bus-MHR 868. Cross-listed in Business Administration: Management and Human Resources.

**870 Seminar in Real Estate G 4**

Policy emphasis in housing economics, housing finance and mortgage and financial capital markets.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**871 Real Property Asset Management G 4**

Cases and readings in feasibility and market analyses; deal structuring and current strategies in real estate; corporate real estate management.

2 2-hr cl. Prereq: Permission of instructor.

**872 Real Estate Finance and Investment G 4**

Introduction to financial mathematics, payment patterns on mortgage loans, financing residential properties, alternative mortgage instruments, secondary mortgage markets, project analysis.

Wi Qtr. 2 2-hr cl. Prereq: 670 or 873 or permission of instructor.

**873 Urban Real Estate Analysis G 4**

Analysis and administration of urban real estate resources, including property valuation, investment analysis, financing, market analysis of local economies, and legal considerations.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**893 Individual Studies G 1-6**

Individual study projects in related areas in finance.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-6**

Group study projects in selected areas in finance.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to maximum of 15 cr hrs.

**920 Theory of Finance G 5**

Examination of the modern theory of asset pricing and its theoretical foundations.

Au Qtr. 3 2-hr cl. Prereq: Successful completion of Finance Qualifying Exam or permission of instructor.

**921 Specifying and Testing Models of Asset Pricing G 5**

Focuses on applied econometric research on asset pricing; emphasis on understanding the flow of research and methods used in financial research.

3 2-hr cl. Prereq: Successful completion of Finance Qualifying Exam or permission of instructor.

**922 Advanced Theory of Finance G 5**

Modern theory of finance; emphasis on developments in dynamics, game theory, and decision making; use of continuous time models and stochastic processes to analyze financial instruments.

Sp Qtr. 3 2-hr cl. Prereq: Successful completion of Finance Qualifying Exam or permission of instructor.

**923 Research in Finance G 5**

Review and access of the research methodologies of finance, and the development and completion of a research paper.

Au, Wi Qtrs. 3 2-hr cl. Prereq: 920, 921, and 922 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**998 Research in Finance: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Finance: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Business Administration: Management and Human Resources

356 Hagerty Hall, 1775 College Road, 292-5028

**211† Unionism and Collective Bargaining in the U.S. U 5**

A survey of unionism and collective bargaining in the U.S. development, structure, and government of unions; process content and effects of collective bargaining.

2 2-hr cl. BER/LAC course. SS Admis Cond course.

**493 Individual Studies U 1-10**

Individual study projects in selected areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**494 Group Studies U 1-10**

Group study projects in selected areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**500 Introduction to Administrative Problems U 3**

Introduction to techniques of management and supervision and to the conceptual frameworks and research underlying them; methods of improving individual and organizational efficiency and effectiveness; cases and exercises.

Au, Wi, Sp Qtrs. 3 cl. Not open to students with credit for 701. Credit for this course will not count toward a BS degree in business administration.

**612\* Law of Industrial Relations U G 4**

Law and policy in labor-management and union-member relations; unfair labor practices; union internal affairs.

2 1½-hr cl. Prereq: 211 or equiv with written permission of instructor.

**613\* Trade Union Administration U G 4**

An examination and analysis of the structure and government of American worker organizations as an institutional response to social, political, economic, and legal forces.

2 1½-hr cl. Prereq: 211 or equiv with written permission of instructor.

**614† Public Sector Collective Bargaining U G 4**

Legislative, judicial, economic, and social factors in public sector bargaining; survey of practice in federal, state, and local jurisdictions.

2 1½-hr cl. Prereq: 211 or grad standing.

**651 Human Resource Policy: Conceptual Framework and Issues U G 4**

Theories of the labor market as applied to the analysis of human resource policy issues; education, training, unemployment, poverty, and discrimination.

Au, Sp Qtrs. 2 1½-hr cl. Prereq: Econ 400 or equiv with written permission of instructor.

**652 Human Resource Policy: Legislation and Institutions U G 4**

Critical review of current or proposed legislation and institutions relating to human resource development, maintenance, and utilization.

Wi Qtr. 2 1½-hr cl. Prereq: 651 or equiv with written permission of instructor.

**653† Human Resource Planning U G 4**

Survey of concepts and techniques of human resource planning, with special emphasis on projections of human resource requirements.

2 1½-hr cl. Prereq: 651 or equiv with written permission of instructor.

**660 Introduction to Human Resources Management U 4**

Principles and practices of recruiting, selecting, developing, compensating, and utilizing effective human resources.

Su, Au, Wi, Sp Qtrs. 2 1½-hr cl. H660 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: Econ 400 or equiv.

**693 Individual Studies U G 1-6**

Individual study projects in related areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 credit hours. This course is graded S/U.

**694 Group Studies U G 1-6**

Group study projects in related areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 credit hours.

**701 Introduction to Organizational Behavior U 5**

Introduction to individual and group behavior in organizations; procedures for supporting and strengthening emergent behavior; examination of organizational interaction with environments.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Honors Prereq: 3.40 CPHR. H701 may be available to students enrolled in an honors program. Not open to students with credit for 500.

**703 Human Resource Training and Development U 4**

Introduction to behavioral concepts and organization practices related to training and developing human resources and organization development.

Au, Sp Qtrs. 2 1½-hr cl. Prereq: 660 or 860 or permission of instructor.

**704 Management Applications in Business U 4**

Application of behavioral science knowledge to managing within the context of business organizations; emphasis on such topics as motivation, supervision, groups, and conflict.

Wi, Sp Qtrs. 2 1¼-hr cl. Prereq: 701 and sr standing in BSBA program. Not open to grad students.

**756 Staffing Organizations U 4**

Introduction to the scientific, legal, and administrative issues associated with the recruitment, hiring, and placement of individuals by organizations.

Wi Qtr. 2 1½-hr cl. Prereq: 660.

**761 Collective Bargaining Administration U 4**

Examination of the process of accommodation and rule-making among management, employees, and government relative to their respective goals and strategies, and pertinent legislation and environmental constraints.

Au, Wi Qtrs. 2 1½-hr cl. Prereq: 660 or 701, or permission of instructor.

**762 Compensation Administration U 4**

Managerial aspects of motivation and compensation principles and practices for administrative, operative, research, and professional employees in private and public organizations.

Wi, Sp Qtrs. 2 1½-hr cl. Prereq: 660 or equiv and Bus-Mgt 330 or equiv; or permission of instructor.

**763 Comparative Labor Movements U G 4**

A comparison of industrial relations practices, history and laws, in Western Europe, Canada, Japan, and the United States.

Au, Sp Qtrs. 2 1½-hr cl. Prereq: Jr, sr, or grad standing in BUS, ASC, or LAW.

**764 Worker-Management Cooperation Initiatives U G 4**

An examination of critical theories, principles, and concepts upon which initiatives such as QWL, QC, ESOP, etc. in union and nonunion environments.

Sp Qtr. 2 1½-hr cl. Prereq: 612 or 614 or 651 or 761 or 763 or equiv with written permission of instructor.

**765 Comparative Management Systems and Environments U G 4**

A conceptual approach for analyses of cultural norms and values and assessment of their implication for managerial decision-making.

Wi, Sp Qtrs. 2 2-hr cl.

**769 Cases in Human Resources Management U 4**

Problems and case histories are utilized to develop proficiency in applying principles and developing decision-making abilities in regard to human resources management.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 761 or 762 or permission of instructor.

**H783 Honors Research U 1-5**

Special topics research in management and human resources; research evaluated through papers, thesis, and/or special examinations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in Business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**795 Entrepreneurship U 4**

Entrepreneurship: managing creativity and growth in the new or emerging firm. Sexton and staff.

1 3-hr cl.

**795.01 Entrepreneurship—BA**

Sp Qtr. Prereq: 701, Bus-Fin 510 and 620, Bus-Mgt 630, Bus-Mktg 650. Not open to students with credit for 795 or 795.02.

**795.02 Entrepreneurship—NB**

Prereq: Sr standing. Open to non-business majors only. Not open to students with credit for 795 or 795.01.

**796 Analysis and Evaluation of New Enterprise U 4**

Practicum course providing students with the opportunity to apply business concepts in problem situations in new enterprises. Sexton.

1 1½-hr cl. Prereq: 795.

**800 Introduction to Administrative Behavior G 3**

Introduction to behavioral concepts of concern to management; individual, group and organizational behavior.

Wi, Sp Qtrs. 2 1¼-hr cl. Not open to students with credit for Bus-MHR 701 or structured MBA.

**801 Laboratory in Management Skills G 4**

Uses behavior modeling techniques to teach students a variety of interpersonal skills needed by generalist managers.

Au Qtr. 1 4-hr cl.

**802 Managerial Negotiations G 4**

Exploration of the major concepts and theories of the psychology of bargaining and negotiation, and the dynamics of interpersonal and intergroup conflicts and their resolution.

Sp Qtr. 2 2-hr cl.

**803 Organization Theory and Design G 4**

An examination of the theories and practices involved in the design of formal organizations.

Wi Qtr. 2 1½-hr cl. Not open to students in structured MBA.

**804 Producing Change in Organizations G 4**

Study of requirements to produce and manage change in organizations.

Au Qtr. 1 4-hr cl.

**805 Career Development G 4**

Study of career development within organizations and organizational perspectives.

Sp Qtr. 2 2-hr cl. Prereq: 800 or 860 or MBA 820 or permission of instructor.

**806 Management and Individual Behavior G 3**

Theory and application of the manager's role in dealing with individual employee behavior.

Sp Qtrs. 2 1½-hr cl.

**811 Human Resource Management Research Methods G 4**

Introduction to methods needed to conduct research in management and human resources.

Au Qtr. 2 -hr cl.

**851 Conceptual and Historical Foundations of Labor and Human Resources I G 4**

Appraisal of theories, principles, and concepts related to macro and micro labor and human resources set within historical context.

Wi Qtr. 2 2-hr cl. Prereq: Admis to grad programs in labor and human resources or permission of instructor.

**852 Conceptual and Historical Foundations of Labor and Human Resources II G 4**

Examination of macro and micro labor human resources issues and policies set within historical context.

Sp Qtr. 2 1 1/2-hr cl. Prereq: 851 or permission of instructor.

**853 Seminar in Human Resource Planning G 4**

Selected topics related to methodologies for preparing, executing, and evaluating human resource plans at the firm, community, and national levels.

Su Qtr. 2 2-hr cl. Prereq: 851, or any of the following: 652, 653 or 654.

**854 Seminar in Human Resource Policy G 4**

Theories of the labor market as applied to the analysis of human resource policy issues, training, unemployment, discrimination, immigration, and poverty.

Sp Qtr. 1 3-hr cl. Prereq: 851; or any of two of the following following: 652, 653, or 654.

**855 Development of Human Resources G 4**

Study of the processes of human resource development as development as identified in theory, research policy and application, experiential learning, and adult development in organization.

Sp, Su Qtrs. 2 2-hr cl. Prereq: 20 cr hrs in related social science courses.

**856 Staffing the Organization G 4**

Examination of the scientific, legal, and administrative issues associated with the recruitment, selection, and placement of individuals by organizations.

Au Qtr. 1 3-hr cl. Prereq: 860 or permission of instructor.

**860 Management of Human Resources G 4**

Analysis of human resources practice and policies, value configurations, leadership, job design, motivation, and reward systems as these relate to individual performance and organizational effectiveness.

Au Qtr. 2 1 1/4-hr cl. Not open to students enrolled in structured MBA. Not open to students with credit for 660 or H660.

**861 Seminar in Union Management Issues G 4**

Examination of such issues as bargaining and conflict resolution processes, grievance handling and arbitration, white-collar unionism, productivity, quality of worklife, safety and health, and flextime.

1 2 1/2-hr cl. Prereq: 860 or equiv, or permission of instructor.

**862 Seminar in Human Resource Management G 4**

Theory and problems involved in selecting, developing, retaining, motivating, utilizing, and allocating human resources within complex organizations.

Au Qtr. 1 2 1/2-hr cl. Prereq: 860 or equiv with permission of instructor.

**864 Labor Dispute Settlement G 4**

Analysis of the functional role of labor conflict in the industrial relations system; evaluation of institutions for dispute resolution in the public and private sectors.

Sp Qtr. 1 2-hr cl. Prereq: 761 or 861.

**865 Compensation Theory and Practice G 4**

Introduction to pay systems; including job evaluation, pay surveys, performance appraisals, and benefits.

Sp Qtr. Prereq: 660, 860, or equiv and Bus-Mgt 330 or equiv. Not open to students with credit for 762.

**868 Contemporary Employment Practices and the Law G 4**

Title VII of the 1964 Civil Rights Act, The Equal Pay Act, the Age Discrimination in Employment Act, the Civil Rights Act of 1967, and federal affirmative action program are discussed.

Au Qtr. 2 2-hr cl. Prereq: 612 or permission of instructor. Not open to students with credit for Bus-Fin 866. Cross-listed in Business Administration: Finance.

**893 Individual Studies U G 1-6**

Individual study projects in related areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 credit hours. This course is graded S/U.

**894 Group Studies U G 1-6**

Group study projects in related areas in management and human resources.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 credit hours.

**895 Seminar in Entrepreneurship G 4**

Lecture, discussion, and case analysis on managing growth in the new or emerging firm. Sexton.

Au Qtr. 2 cl.

**895.01 Seminar in Entrepreneurship—BA**

Prereq: BA core and permission of instructor. Not open to students with credit for 895 or 895.02.

**895.02 Seminar in Entrepreneurship—NB**

Open to non-business graduate students only. Not open to students with credit for 895 or 895.01.

**911 Introduction to Behavioral Research Methods in Business G 4**

Introduction to research design and methodology as it relates to the study of business and organizational phenomena.

Au Qtr. 1 3-hr cl. Prereq: 613 and 761 or equivs, or permission of instructor.

**912 Advanced Analysis of Organizational Research G 4**

Analysis and comparison of relevant business and organizational theories through an in-depth consideration of research design, methods, and analysis and the development of student-originated research proposals.

Au Qtr. 1 3-hr cl. Prereq: Bus-Mgt 911 and permission of instructor.

**913 Individual Behavior in Formal Organizations G 4**

Advanced discussions of theory and research on individual behavior, motivation, decision-making, job design, and reward system as they relate to individual and organizational performance.

Sp Qtr. 1 3-hr cl. Prereq: 919 and permission of instructor.

**914 Work Groups in Formal Organizations G 4**

Theory and research on formal and informal structures in work groups and their influence on productivity and management.

1 3-hr cl. Prereq: 919 and permission of instructor.

**915 Advanced Formal Organization Theory G 4**

Theory and research on the structural characteristics of formal organizations with particular emphasis on the management of the organization as a dynamic system.

Wi Qtr. 1 3-hr cl. Prereq: 919 and permission of instructor.

**916 History of Macro-Organizational Behavior G 4**

Development of theory, research, and thought in macro-organizational behavior.

1 3-hr cl.

**917 Seminar in Organizational Behavior G 4**

A critical study of current research problems and trends in organizational behavior; builds on the concepts, models, and perspectives developed in 913, 914, and 915.

1 3-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**918 Seminar in Integrative Organizational Behavior Research G 2**

Continuing seminar for integration of organizational behavior concepts.

Wi, Sp Qtrs. Arr. Prereq: Enrollment in the organizational behavior area of the Bus Adm PhD program. This course is graded S/U.

**919 Theoretical Foundations of Organizational Thought G 4**

Semin ar in the historical evolution of concepts, models, and perspectives in organizational behavior and the practice of management.

Wi Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**920 Seminar in Strategic Management G 4**

An examination of the concepts, models, theories, and research underlying contemporary thinking on strategic management.

Sp Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**925 Seminar in International Business G 4**

A critical study of current research methodologies and findings in the field of international business.

Wi Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**950 Advanced Experience in Labor and Human Resources G 1-6**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 12 cr hrs in Bus-MHR.

**950.01 Internship**

Supervised practical experience relating to labor and human resources in public or private establishments, Center for Human Resource Research, Labor Education and Research Service, or under a faculty member.

**950.02 Tutorial**

Preparation of investigative paper relating course work to specific problem in industrial relations or human resource policy.



**951 Advanced Seminar in Human Resource Policy G 4**

Selected issues in human resource policy at federal, state, and local government levels.

2 2-hr cl. Prereq: 852.

**952 Advanced Seminar in Unionism and Collective Bargaining G 4**

Selected issues in unionism and collective bargaining.

2 2-hr cl. Prereq: 613 and 761 or equivs, or permission of instructor

**956 Seminar in Staffing P G 4**

Examination of theory and research on staffing in complex organizations.

Sp Qtr. 1 3-hr cl. Prereq: One course in stat or permission of instructor.

**960 Seminar in Industrial Relations Thought G 4**

A consideration of industrial relations thought in terms of its historical and theoretical evolution in private and public sectors.

Au Qtr. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**961 Seminar in Industrial Relations Research G 4**

A consideration of relevant industrial relations research and methodology, and individual development of research projects in private and public sectors.

1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**963 Seminar in Training and Development G 4**

Examination of theory and research on training and development in complex organizations.

Wi Qtr. 1 3-hr cl. Prereq: One course in stat or permission of instructor.

**965 Seminar in Compensation G 4**

Examination of theory and research on compensation administration in complex organizations.

1 3-hr cl. Prereq: One course in stat or permission of instructor.

**998 Research in Labor and Human Resources: Thesis G 1-7**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 12 cr hrs in BUS-MHR at 800 level or above. Repeatable to a maximum of 20 hrs. This course is graded S/U.

**999 Research in Labor and Human Resources: Dissertation G 1-15**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

## Business Administration: Management Sciences

301 Hagerty Hall, 1775 College Road, 292-1275

**330 Decision Sciences: Statistical Techniques U 5**

Examination of the use of statistical techniques in managerial decision-making processes; confidence intervals, hypothesis testing, simple and multiple regression.

Su, Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: Cptr/Inf 211 and Stat 133 or equiv. Not open to students with credit for 491.

**331 Decision Sciences: Operations Research Techniques U 4**

Examination of the use of operations research techniques in managerial decision making processes; constrained linear optimization, non-linear optimization, network analysis, queuing theory, simulation.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Cptr/Inf 211 and Stat 133 or equiv. Not open to students with credit for 391.

**493 Individual Studies U 1-10**

Individual study projects in selected areas in management sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**494 Group Studies U 1-10**

Group study projects in selected areas in management sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**601 Business Statistics U G 4**

Applications of statistical techniques to the analysis of business and economic data.

2 2-hr cl. Prereq: 330 or 491.

**630 Introduction to Operations Management: Improving Competitiveness in Organizations U G 4**

Key operating issues in service and manufacturing organizations that have strategic and tactical implication. Students participate in discussions relating current business events to operations management and case analysis.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H630 (honors) may be available to students enrolled in an honors program or by permission of faculty.

**693 Individual Studies U G 1-6**

Individual study projects in selected areas in management sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-6**

Group study projects in selected areas in management sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**702 Special Topics U G 4**

Consideration of special techniques used in the solution of quantitative management problems.

Au, Wi Qtrs. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**731 Operations Strategy and Design U G 4**

An analysis of the strategic implications of operations management decision making and issues involved in designing a productive system; topics include facility location and layout, capacity management, quality management, and the management of technology.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 330 or 491, 331 or 391, and 630; or permission of instructor.

**732 Operations Planning and Control U G 4**

An analysis of the planning and control of materials as they flow within an organization; topics include short term forecasting, production planning, management of independent and dependent inventories, intermediate range capacity management, master production scheduling, and just-in-time techniques.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 330, 331, and 630, or permission of instructor.

**733 Information Systems in Operation Management U G 4**

A study of the impact that information systems have on strategic and tactical decisions of operations managers; emphasis on applying decision support systems to problems faced by these managers.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 630 and a course in computer programming, or permission of instructor.

**735 Purchasing and Materials Management U G 4**

Explores the industrial purchasing cycle for materials acquisition and management.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 630 and Bus-Mktg 650.

**739 Operations Scheduling and Control U G 4**

The analysis of the decisions involved in the short term planning and control of a productive system; topics include order review, scheduling, monitoring, corrective action, quality control, and order disposition; these activities are examined in project, job shop, batch, and high-volume production systems.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 330, 331, and 630, or permission of instructor.

**750 Quality Management U G 4**

Topics in quality philosophy and management strategy, essential technical tools, and quality costs; study of the writings of Deming, Juran, Crosby, and others.

Au Qtr. 2 2-hr cl. Prereq: 330 or 702 or MBA 870.

**H783 Honors Research U 1-5**

Special topics research in management sciences; research evaluated through papers, thesis, and/or special examinations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**801 Quantitative Methods in Business G 4**

Derivation and application of analytical, mathematical, and statistical techniques to the solution of recurring management problems.

2 1 1/2-hr cl. Prereq: Stat 133 or equiv or permission of instructor.

**801.01 Business Data Modeling I**

Introduction to quantitative management techniques for first year doctoral candidates in business administration.

Prereq: Math 503 and grad standing in BUS or permission of instructor.

**801.02 Business Data Modeling II**

Continuation of 801.01 with emphasis on stochastic modeling techniques.

Prereq: 801.01.

**801.03 Business Data Modeling III**

Emphasis on deterministic modeling techniques for business management problem solving.

Prereq: 801.01. Repeatable to a maximum of 12 cr hrs.

**802 Systems Research Organization and Methodology G 3**

Modeling adaptive management systems of complex organizations such as health, business, and education.  
1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**808 Strategic Decision Making P G 4**

Study decisions made by organizations to discover common problems and provide skills that overcome these difficulties.  
Wi Qtr. 2 2-hr cl. Prereq: MBA 870 or permission of instructor.

**809 Strategic Management Methods P G 4**

Use of cases and exercises to explore how strategies and plans are developed and implemented in organizations.  
Sp Qtr. 2 2-hr cl. Prereq: MBA 870 or permission of instructor.

**830 Service/Quality Management G 4**

Study of the strategic and tactical issues defining, measuring, and managing product and service quality in service organizations.  
Wi Qtr. 2 2-hr cl. Prereq: MBA 850, or permission of instructor.

**832 Operations Management Information Systems G 4**

Examination of major issues in planning and scheduling in an information systems context; production database, requirements planning, and scheduling processing; decision support systems in operations management and computerized manufacturing systems.  
2 2-hr cl.

**834 Strategic Design of Operations/Logistics Systems G 4**

Issues facing operations managers in the 1990s: new-technology management, quality management, capacity planning, and productivity management.  
2 2-hr cl. Prereq: MBA 850 and 870, or permission of instructor.

**835 Operations Planning and Materials Management G 4**

The major responsibilities of materials managers; including aggregate planning and master scheduling, inventory management, and scheduling; major issues and strategies including tactical purchasing methods, techniques for analysis, and Japanese manufacturing philosophies will be discussed.  
Sp Qtr. 2 1½-hr cl. Prereq: MBA 850, 871, or permission of instructor.

**838 Forecasting for Decision-Making G 4**

Consideration of major forecasting methods with emphasis placed on concepts, applications, and choosing most appropriate method.  
2 2-hr cl; lecture and discussion of case studies. Prereq: Basic statistics; 331 or equiv. Not open to students with credit for 894F.

**893 Individual Studies G 1-6**

Individual study projects in selected areas in management sciences.  
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-6**

Group study projects in selected areas in management sciences.  
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**901 Seminar in Management Science G 4**

Consideration of advanced topics in management science with an emphasis on quantitative analysis.  
Wi Qtr. varies. 2 2-hr cl. Prereq: Mgt Sci 801.02 and 801.03 and permission of instructor.

**929 Current Research in Operations Management G 2**

A series of weekly lectures and seminar discussions on current research topics in operations management.  
Au Qtr. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**930 Special Topics in Operations Management G 3**

A critical study of selected topics in operations management focusing on the status of research efforts to date; topics vary.  
Wi Qtr. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**931 Seminar in Operations Management G 3**

A critical review of the literature in the field of operations management; in odd-numbered years, the review covers the process design, location, and layout areas while the production planning and control topics are covered in even-numbered years.  
Sp Qtr. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**998 Research in Management Sciences: Thesis G Arr**

Research for thesis purposes only.  
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Management Sciences: Dissertation G Arr**

Research for dissertation purposes only.  
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Business Administration: Marketing

221 Hagerty Hall, 1775 College Road, 292-8808

**493 Individual Studies U 1-10**

Individual study projects in selected areas in marketing.  
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**494 Group Studies U 1-10**

Group study projects in selected areas in marketing.  
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**650 Marketing U G 4**

Critical survey of field of marketing; structure, functions, policies, costs, and problems analyzed from consumer and other viewpoints; emphasis on principles, trends, and quantitative expression.  
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H650 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: Econ 200 or equiv.

**680 Principles of Transportation U G 4**

Study of general economic characteristics and government regulation of rail, motor, water, air, and pipeline carriers; consideration of competitive relations between modes of transportation, basic aspects of traffic management.  
Au, Sp Qtrs. 2 2-hr cl. Prereq: Econ 200 or equiv.

**693 Individual Studies U G 1-6**

Individual study projects in related areas in marketing.  
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-6**

Group study projects in selected areas in marketing.  
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**700-level courses are not available for graduate credit if taught by a graduate instructor. Please check Master Schedule for limitation codes.**

**750 Consumer Behavior U G 4**

A review and synthesis of behavioral sciences applied to understanding consumer decision process; emphasis on the impact of consumer decisions upon the strategies of business, government, and consumer business cases.  
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv.

**751 Managerial Marketing U G 4**

Marketing policies and strategy; organization, demand analysis, product planning, pricing, physical distribution, and promotion from a managerial viewpoint.  
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv; and 758 or 758 concurrent with permission.

**752 Cases in Managerial Marketing U G 4**

Analysis of marketing policies and strategy, with emphasis on actual business cases.  
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 751.

**753 Retail Management U G 4**

Principles and methods of management as applied to retailing, including location, organization, personnel, buying, inventory control, selling and advertising, services, expenses, and profits.  
Su, Au, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv.

**755 Promotional Strategy U G 4**

Consumer behavior, fundamentals of communication, setting goals and objectives, creative strategy, media strategy, and social and economic issues.  
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv.

**757 International Marketing U G 4**

Theory and practice of marketing across national borders, as well as marketing and market research within different foreign environments, including the development of marketing strategies by the international company.  
Au, Sp Qtrs. 2 2-hr cl. Prereq: 650 and Bus-Adm 555.

**758 Marketing Research U G 4**

The role of research in the solution of marketing problems; emphasis on available data analysis and methods of the field of investigation.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 and Bus-Mgt 330 and 331.

**759 Sales Management U G 4**

The sales force and its managerial hierarchy.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 650.

**780 Micro-Logistics U G 4**

Management of logistics activities of the firm from the viewpoint of both the provider and user of logistics system components.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 650 and Bus-Mktg 680.

**781 Analysis and Design of Logistics Systems U G 4**

Analysis of internal and environmental factors affecting logistics systems and the effect of such factors on the development and implementation of integrated logistics systems.

Sp Qtr. 2 2-hr cl. Prereq: 680 and 780.

**782 Logistics Decision Making U G 4**

Analysis of decision making in the current logistics environment and the tools needed for finding solutions to logistics problems such as inventory, transportation, and warehouse management.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 780 and Cptr/Inf 211.

**H783 Honors Research U 1-5**

Special topics research in marketing and/or transportation and logistics; research evaluated through papers, thesis, and/or special examinations.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**807 Principles and Techniques of Marketing Research G 4**

Comprehensive study of marketing research process and value of research to managers; design and execution of industry-sponsored project.

Au Qtrs. 2 2-hr cl. Prereq: 840.

**852 Seminar in Specialized Areas of Marketing G 1-4**

Prereq: 650 or equiv; and permission of instructor.

**852.06 Channels of Distribution****852.07 Marketing Theory****852.08 Logistics****852.09 Consumer Research**

A— Research Design in Consumer Behavior.

B— Consumer Behavior Theory. Au Qtr.

C— Consumer Decision Making. Wi Qtr.

**854 Consumer Behavior G 4**

Development of the consumer decision process and its application to marketing strategy decisions.

Wi Qtr. 2 2-hr cl, lab. Prereq: 850 or MBA 840 or permission of instructor.

**858 Multivariate Analysis in Business Research G 4**

Advanced consideration of correlational data analysis techniques (regression, discriminant analysis, factor analysis, canonical analysis); emphasis on comparison of techniques and underlying theory and assumptions.

2 3-hr cl. Prereq: 801.01, 801.02, and Stat. 625, or permission of instructor.

**880 Physical Distribution Management G 4**

Management of movement services and coordination of demand and supply patterns for optimization of physical systems in terms of cost and customer service.

Au Qtr. 2 2-hr cl. Prereq: 650 and Bus-Mgt 630, or equivs.

**889 Theory of Business Logistics G 3**

Critical examination of various theories of the structure and operation of logistics systems; research methodology for testing logistics theory and the application of logistics theory to contemporary logistics problems.

Sp Qtr. 1 3-hr cl.

**893 Individual Studies G 1-6**

Individual study projects in related areas of marketing.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-6**

Group study projects in selected areas in marketing.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**950\* Seminar in Logistics and Distribution Channels G 3**

Critical examination of the role of logistics and distribution channel systems in micro- and macro-marketing systems.

Prereq: 850 or equiv.

**951 Marketing Models G 3**

A study of recent model-based research in the marketing literature; emphasis on the strengths and weaknesses of various modeling approaches in specific problem areas and evaluation of model-based research.

Sp Qtr. Prereq: 959 or permission of instructor.

**955\* Seminar in Contemporary Marketing Problems G 3**

Review of current periodical literature and individual investigation by each student of a selected marketing problem of contemporary significance for seminar discussion and written report.

Sp Qtr. Prereq: 950 or equiv.

**959\* Foundations of Marketing Thought G 3**

An analysis and evaluation of the evolution of marketing thought in a mass production/mass consumption context; a consideration of interdisciplinary relationships and contemporary theoretical insights.

Au Qtr. 1 3-hr cl. Prereq: 850 or equiv.

**998 Research in Marketing: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Marketing: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Cell Biology, Neurobiology, and Anatomy

4072 Graves Hall, 333 West 10th Avenue, 292-4831

For related courses see Medicine and Zoology.

**199 Basic Human Anatomy U 5**

The basics of human anatomy supplemented by computer-assisted instruction and demonstrations of human material. Guy and Turner.

4 1-hr cl, 1 2-hr lab. Not open to students with credit for 200. Not for students planning to take 201.

**199.01 Basic Human Anatomy**

Au, Wi, Sp Qtrs. Enrollment in CED or an undeclared major.

**199.02 Basic Human Anatomy**

Au Qtr. Prereq: Enrollment in pharmacy. Emphasis on nervous, urinary, and digestive systems.

**199.03 Basic Human Anatomy**

Wi, Sp Qtrs. Prereq: Biology 101 and enrollment in pre-nursing program. Emphasis on clinical relationships.

**199.04 Basic Human Anatomy**

Wi, Sp Qtrs. Prereq: Enrollment in pre-AMP and AMP only. Emphasis directed toward speciality.

**199.05 Basic Human Anatomy**

Wi Qtr. Prereq: Enrollment in DHY only. Emphasis on head and neck anatomy.

**200 Introductory Anatomy U 6**

Fundamental principles of human anatomy, supplemented by demonstrations of human material. Guy and Turner.

Sp Qtr. 4 cl, 2 2-hr labs. Prereq: Confirmed acceptance in programs in phys ther, occ ther, or rad tech. Not open to students with credit for 199.

**201 Neuromuscular Anatomy U 5**

Neuromuscular anatomy of the human body. Chidley.

Au Qtr. 2 cl, 2 3-hr labs. Prereq: Enrollment in AMP or permission of instructor.

**601 Human Anatomy for Dental Students P 7**

The integrated study of the gross, microscopic, neurologic, and embryonic anatomy of the human body. Hayes and staff.

Au Qtr. 6 cl, 1 3-hr lab. Prereq: Dent 1st yr standing.

**602 Human Anatomy for Dental Students P 7**

A continuation of 601. Hayes and staff.

Wi Qtr. 6 cl, 1 3-hr lab. Prereq: 601.

**603 Human Anatomy for Dental Students P 7**

A continuation of 602. Hayes and staff.

Sp Qtr. 6 cl, 1 3-hr lab. Prereq: 602.

## 693 Individual Studies in Cell Biology, Neurobiology, and Anatomy U G 2-5, P 6, 12, 18

Designed to enable the student to pursue a minor investigation in some anatomical field of choice.

Su, Au, Wi, Sp Qtrs. 1 month, offered all months. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs for professional credit. This course is graded S/U.

**700 Human Histology U G 6**

A microscopic study of cells, tissues, and organs with particular emphasis on human; consideration of microscopic structure in relation to function of various organ systems. Hayes.

Sp Qtr. 3 cl, 3 2-hr labs. Prereq: Permission of instructor.

**710 Human Embryology G 3 or 5**

Designed to acquaint the anatomy graduate student with a basic knowledge of human embryology. Sucheston.

Au Qtr (starts 3rd week in August). Arr. Prereq: Permission of instructor.

**712 Human Anatomy G 12**

Designed to acquaint the anatomy graduate student with a basic knowledge of human gross anatomy by regional dissection. Negulesco.

Au Qtr (starts 3rd week in August; ends in mid-November). Arr. Prereq: Permission of instructor.

**716 Human Neurobiology G 7**

Designed to acquaint the anatomy graduate student with a basic knowledge of human neuroanatomy. Martin.

Sp Qtr. Arr. Prereq: Permission of instructor.

**750 Radiologic Anatomy G 2**

Anatomy of specific regions or areas as it applies to the interpretation and understanding of diagnostic images. Hines.

Sp Qtr. Arr. Prereq: Satisfactory completion of Med Coll 662, or Anatomy 712 or equiv and permission of instructor. Repeatable to a maximum of 8 cr hrs. Cross-listed with Radiology 750.

**790 Developmental Neurobiology G 3**

Interdisciplinary approach to the development of neural cells and the formation and maturation of vertebrate and invertebrate nervous systems. Alley, Beattie, Nordlander, Smith, Volman.

Au Qtr. 2 1½-hr cl. Prereq: Neurosci 723, 724 and 725, or permission of instructor. Cross-listed in Neuroscience.

**804 Current Topics in Cell Biology G 5**

Advanced studies in selected areas of cell biology, with a focus on the structural components of the cell and an emphasis on interrelationships of cellular compartments. Burry, DePhilip, Robinson, Strauch, and Vandr . Sp Qtrs. Arr. Prereq: Permission of instructor and Biochem 511 or 613 series.

**805\* Techniques in Cell Biology G 5**

A survey of research techniques used to solve problems in modern cell biology including, but not limited to, cell culture, immunofluorescence, and electrophoresis of macromolecules. DePhilip.

Sp Qtr. 2 1½-hr cl, 2 2-hr lab. Prereq: Permission of instructor.

**850 Seminar in Cell Biology, Neurobiology, and Anatomy G 1**

Discussions of research in progress and reports from the literature of current anatomical problems.

Su, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs.

**911 Advanced Studies in Cell Biology, Neurobiology, and Anatomy G 3 or 5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**911.02 Connective Tissue and Bone**

Activities of fibrous connective tissues emphasizing formation and maintenance of fibers and ground substance; dynamics of the structure, chemistry, and metabolism of bone. Melfi.

**911.03 Embryology**

Mammalian embryological development emphasizing descriptive or experimental approach; metabolic aspects of development including enzymatic changes, hormonal effects, environmental factors, and teratogenic agents. Clark, and Sucheston.

**911.05 Neurobiology**

Advanced study of a particular system or systems in the central nervous system, including literature perusal. Beattie, Bishop, Bresnahan, Burry, Clark, King, and Martin.

**911.07 Synaptic Organization of the Nervous System**

Use of the electron microscope to define and analyze synaptic circuits within the central nervous system. Burry and King.

**911.09 Instrumentation and Techniques in Experimental Neurobiology**

Practical experience in learning techniques utilized in neuroanatomical research problems. Bishop, Burry, Clark, and Martin.

**911.10 Principles of Human Cytogenetics**

Human cytogenetics as related to autosomal and sex chromosomes; technique of tissue culture for study of human chromosomes and karyotype analysis. Hayes.

**911.13 Topographical Anatomy**

Study of unmounted serial cross sections of selected regions of the human body emphasizing the inter-relationship of structures to one another in a three-dimensional perspective. Hines and Negulesco.

**911.14 Advanced Regional Dissections**

Careful dissection of one or more regions of the body, supplemented with literature research. Hines and Negulesco.

**911.15 Oral-Sensation and Movement G 3**

Neurobiology of oral sensation and movement; focus on advanced physiology, anatomy, and pharmacology of neural systems regulating jaw functions. Alley.

Su Qtr. 1 2½-hr cl. Prereq: Neurosci 723, 724 and 725, or permission of instructor. Enrollment limited to 4-8 students.

**999 Research in Cell Biology, Neurobiology, and Anatomy G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Chemical Engineering

121 Koffolt Laboratories, 140 West 19th Avenue, 292-6591

**200 Chemical Engineering and Process Calculations U 3**

The application of physico-chemical principles to problems of the chemical industry; emphasis on graphical methods, stoichiometry, heat, and material balances. Chalmers, Ozkan, Rathman, and Zakin.

Au, Wi Qtrs. 2 cl, 2 comp lab hrs. Prereq: Chem 123 and En Graph and a minimum CPHR of 2.00, and prereq or concur: Math 254 and Physics 131.

**201 Chemical Engineering and Process Calculations U 3**

Continuation of 200. Chalmers, Ozkan, Rathman, and Zakin.

Wi, Sp Qtrs. 2 cl, 2 comp lab hrs. Prereq: 200 and prereq or concur: Math 255 and Physics 132.

**294 Group Studies U 1-6**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**420 Elements of Chemical Engineering—Transport Phenomena I U 4**

Introduction to momentum, mass, and heat transfer with emphasis on the analogies between them; practical applications of momentum transfer (fluid flow). Chalmers, Fan, Hershey, Koelling, Rathman, Yang, and Zakin.

Sp Qtr. 3 cl, 2 comp lab hrs. Prereq: 201, Math 255, and Physics 132, or equivs with written permission of instructor.

**489 Professional Practice in Industry U 2**

Preparation of a comprehensive report based on employment experience in a co-op job in industry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to co-op program in chem eng. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**508 Chemical Engineering Thermodynamics I U G 3**

Application of the fundamental concepts and laws of thermodynamics to problems of the chemical industry; stress on computational problem work. Hershey, Ozkan, and Rathman.

Au Qtr. 2 cl, 2 comp lab hrs. Prereq: 201 and 420. Hershey, Ozkan, Rathman, Tomasko.

**509 Chemical Engineering Thermodynamics II U G 3**

Continuation of 508.

Wi Qtr. 2 cl, 2 comp lab hrs. Prereq: 508.

**520 Transport Phenomena U G 3**

Momentum, mass, and heat transfer with emphasis on the analogies between them; practical applications of momentum transfer (fluid flow). Chalmers, Fan, Hershey, Koelling, Rathman, Yang, and Zakin.

Sp Qtr. 3 cl. Prereq: Math 255. Not open to students with credit for 420.

**521 Elements of Chemical Engineering—Transport Phenomena II U G 3**

Continuation of transport theory with emphasis on heat transfer and introduction to radiation; basic principles developed and illustrated with problems from chemical engineering practice. Chalmers, Davis, Koelling, Ozkan, Tomasko, and Yang.

Au Qtr. 2 cl, 2 comp lab hrs. Prereq: 420 or 520.

**522 Elements of Chemical Engineering—Transport Phenomena III U G 3**

Continuation of the study of transport theory; emphasis on mass transfer and stagewise operations with applied computational problems. Fan and Tomasko.

Wi Qtr. 2 cl, 2 comp lab hrs. Prereq: 521.

**523 Chemical Engineering Operations U G 4**

The application of transport phenomena such as fluid, heat, and mass transfer to the chemical engineering operations of evaporation, distillation, drying, etc. Fan and Koelling.

Sp Qtr. 3 cl, 2 comp lab hrs. Prereq: 522 and Chem 532.

**610 Chemical Engineering Kinetics U G 3**

Chemical and engineering principles for the design and operation of chemical reactors; kinetics of simple homogeneous systems and introduction to heterogeneous catalysis. Chalmers and Ozkan.

Sp Qtr. 2 cl, 2 comp lab hrs. Prereq: 509, 522, or Chem 532.

**624 Chemical Process Dynamics and Control I U G 3**

Study of the dynamics and control of chemical processes; mathematical models of simple processes, including feedback control, are derived, analyzed, and simulated. Bakshi, Davis, and Yang.

Au Qtr. 3 cl. Prereq: 523, 610, 630 and Math 512.

**626 Digital Control Techniques in Chemical Engineering U G 3**

Study of real-time data acquisition and digital control techniques as applied to chemical processes. Bakshi, Chen, and Davis.

Wi Qtr. 2 cl, 3 lab hrs. Prereq: 624 and En Graph 200, or permission of instructor.

**630 Chemical Engineering Operations Laboratory U G 4-8**

The fundamental laboratory course in the chemical engineering operations; laboratory investigation of the operating characteristics and efficiency of chemical engineering equipment such as distillation, drying, filtration, etc.

Su Qtr. 5 conf, 7-19 lab hrs. Prereq: 523 or equiv with written permission of instructor.

**663 Coal and Mineral Characterization and Preparation U G 3**

Schematic and mathematical description of coal and mineral preparation circuits and the design of preparation units for specific minerals or coal aimed at particular markets. Skidmore.

Au Qtr. 3 cl. Prereq: Math 254 or permission of instructor.

**666 Principles of Biochemical Engineering U G 3**

Fundamental study of transport phenomena and other biochemical engineering principles with applications in processing of biological materials (animal, vegetable, microorganism). Chalmers and Yang.

Wi Qtr. 3 cl. Prereq: ENG or science sr or grad standing.

**693 Individual Studies in Chemical Engineering U G 1-8**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies in Chemical Engineering U G 1-6**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**712 Catalysis and Catalytic Processes U G 3**

Kinetics of catalytic processes, mass transfer in catalysis, catalyst preparation and characterization, deactivation of catalysts, catalytic reactors, and application of catalytic phenomena in industrial processes. Ozkan.

Sp Qtr. 3 cl. Prereq: 522 and 610.

**726 Chemical Process Dynamics and Control II U G 3**

Further development of process dynamics and control topics begun in 624. Bhavik.

Sp Qtr. 3 cl. Prereq: 624 or permission of instructor..

**733 Novel Separation Processes U G 3**

Introduction to engineering analysis and experimental application of absorption, ion exchange, membrane processes, and others with applications in gas mixtures and liquid mixtures. Tomasko.

Wi Qtr. 1 3-hr cl for 8 wks, 6 hrs lab/wk for 2 wks. Prereq: 522 or 815.02 and 523, Math 512, or permission of instructor.

**739 Knowledge-Based Systems in Engineering U G 3**

Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation. Davis.

Wi, Sp Qtrs. 2 1½-hr cl. Prereq: Cptr/Inf 630 or permission of instructor. Cross-listed in Computer and Information Science; Civil, Mechanical, and Nuclear Engineering.

**750 Profession of Chemical Engineering U 0-1**

The roles in professional activities performed by chemical engineers, code of ethics, professional registration, professional societies, responsibilities to management and to labor and as an administrator. Fan and Zakin.

Au, Sp Qtrs. 1 cl. Prereq: Jr standing. Progress graded Sp Qtr, credit/grade awarded upon completion of Au Qtr.

**760 Chemical Engineering Economy and Strategy U G 4**

Economic and strategy considerations in research; development, design, and manufacturing in the chemical process industry; cost estimation and economic optimization of chemical engineering operations and chemical processes. Fan and Yang.

Au Qtr. 3 cl, 1 recitation. Prereq: 610 and 630.

**761 Chemical Engineering Processes U G 3**

Integration of fundamentals of chemistry, chemical engineering operations, thermodynamics, reaction kinetics, and economics for optimum design and operation of chemical process plants. L. J. Lee, Booth.

Au Qtr. 2 cl, 2 comp lab hrs. Prereq: Sr standing in chem eng or chem.

**762 Chemical Engineering Process Development U G 4**

Library, laboratory, and pilot plant research and development of chemical processes of industrial potential justified by preliminary economic studies; preparation of optimum process flow sheets; plant design studies. L. J. Lee and S. T. Yang.

Au, Wi Qtrs. 1 cl, 11 lab hrs. Prereq: 610, 630, and prereq or concur: 760.

**763 Special Problems in Process Design U 2**

Analysis of definite problems having theoretical and practical application to the chemical industry; individual effort guided by a chemical engineering staff member. Hershey.

Wi Qtr. 6 hrs conf and lab. Prereq or concur: 760.

**764 Chemical Engineering Process Design U G 4**

Process design studies on selected chemical processes encompassing a broad spectrum of fundamental engineering principles; optimization studies utilizing economic and technical simulation. Bhavik and Davis.

Sp Qtr. 2 cl, 2 4-hr labs. Prereq: 762.

**766 Biotechnology and Bioprocess Engineering U G 3**

Fundamentals of biotechnology and their applications to bioprocessing with emphasis on fermentation and bioseparation. Chalmers and Yang.

Sp Qtr. 3 1-hr cl. Prereq: 666 or BioChem 511 or Microbiol 520 or equiv, or permission of instructor. Continuation of Chem Eng 666.

**767 Coal Liquefaction Processing U G 3**

Definition of design features for special operations in coal liquefaction; exposition of structure—reactivity relation and description of competing liquefaction technologies including in-situ coal liquefaction.

Wi Qtr. 3 cl. Prereq: Math 254 or permission of instructor.

**769 Coal Gasification Processing U G 3**

Description, analysis, and design of important units in coal gasification processes.

Sp Qtr. 3 cl. Prereq: Math 254 or permission of instructor.

**771 Air Pollution U G 3**

Sources of air pollutants, properties of small particles, chemistry of air pollution, dispersion and deposition of air pollutants, and air pollution control. Hershey.

Wi Qtr. 3 cl. Prereq: ENG sr standing or permission of instructor.

**773 Introduction to High Polymer Engineering U G 3**

Engineering of polymerization and polymer forming processes based upon thermodynamics, transport phenomena, and reaction kinetics; relationships of engineering properties of high polymers to molecular characteristics. Koelling and L. J. Lee.

Au Qtr. 3 cl. Prereq: 610 and organic chem or permission of instructor.

**775 Rheology of Fluids U G 3**

Principles of rheology including the characteristics of non-Newtonian materials, rheological equations of state, viscometric flows, measurements and applications to the flow of industrial materials. Brodkey and Zakin.

Sp Qtr. 3 cl. Prereq: 420 or 520 or equiv with written permission of instructor.

**776 Principles of Polymer Conversion Operations U G 3**

Principles of thermodynamics, transport phenomena, polymer chemistry and physics will be related to polymer processing (converting high polymers) through application of mathematical and analytical approaches. Koelling and L. J. Lee.

Wi Qtr. 3 cl. Prereq: 773 or permission of instructor.

**779 Chemical Engineering Experimental Design U G 3**

Industrial and research experiments designed with special emphasis on reducing the number of experiments, interpreting final results, and ensuring against unknown factors. Hershey.

Au Qtr. 3 cl. Prereq: En Graph 167 or equiv or permission of instructor.

**781 Chemical Engineering Optimization U G 3**

Description, analysis, and comparison of the techniques in use in unimodal optimization; linear programming; geometric programming. Hershey.

Sp Qtr. 3 cl. Prereq: En Graph 167 or equiv or permission of instructor.

**790 Process Modeling and Simulation U G 3**

Application of basic chemical engineering principles to construct mathematical models of industrial processes and the simulation thereof by digital and analog techniques. Fan.

Au Qtr. 3 cl. Prereq: Permission of instructor.

**801 Advanced Special Problems in Chemical Engineering** G 1-15

A minor problems course covering the chemical engineering operation, instrumentation, thermodynamics, kinetics, the transport fields, and chemical technology.

Su, Au, Wi, Sp Qtrs. Conf, library, and/or lab. Prereq: Satisfactory courses in field of problem undertaken and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**808 Advanced Chemical Engineering Thermodynamics I** G 3

Detailed discussion of the thermodynamic properties of pure compounds and mixtures; computational problem work emphasizes the application of thermodynamics in industrial problems. Davis, Hershey, Rathman and Tomasko.

Sp Qtr. 3 cl. Prereq: 509 or equiv with written permission of instructor.

**812 Advanced Chemical Engineering Kinetics I** G 3

Chemical engineering kinetics from the viewpoint of industrial chemical processes. Chalmers, Fax, and Ozkan.

Au Qtr. 3 cl. Prereq: 523 and 610; or permission of instructor.

**813 Advanced Chemical Engineering Kinetics II** G 3

Continuation of 812.

Wi Qtr. 3 cl. Prereq: 812.

**815 Advanced Chemical Engineering Science and Applications** G 3

Advanced concepts of science and engineering as applied to the chemical engineering field under various topics.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Chem eng grad standing or permission of instructor. Repeatable to a maximum of 45 cr hrs. Subdivisions are not repeatable.

**815.01 Advanced Mass Transfer—I**

Fan and Tomasko.

**815.02 Advanced Mass Transfer—II****815.05 Advanced Heat Transfer—I**

Conduction, radiation, and convection. Chalmers and L.J. Lee.

**815.08 Advanced Momentum Transfer—I**

Basic theory, laminar flow, and phenomenological turbulence. Brodkey and Koelling.

**815.09 Advanced Momentum Transfer—II**

Turbulence, mixing, and chemical reaction. Brodkey.

**815.10 Advanced Momentum Transfer—III**

Two-phase phenomena. Brodkey.

**815.15 New or Unusual Chemical Engineering Operations**

Examples: adsorption, atomolysis, dialysis exclusion, sublimation.

**881 Seminar in Chemical Engineering** G 2

Formal reports, lectures, and discussions of fundamentals and new developments in science and technology as related to chemical engineering.

Su, Wi Qtrs. 2 conf hrs. Prereq: Grad standing in chem eng. Repeatable to a maximum of 12 cr hrs.

**981 Research Seminar in Chemical Engineering** G 2

Formal reports, lectures, and discussions of research topics in chemical engineering.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in chem eng.

**999 Research in Chemical Engineering** G Arr

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Chemical Physics

018 New Chemistry Building, 120 West 18th Avenue, 292-2569/3679

**999 Research in Chemical Physics: Dissertation** G Arr

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Chemistry

General Chemistry Office, 115 McPherson Chemical Laboratory, 140 West 18th Avenue, 292-6009; Department Office, 100 New Chemistry Building, 120 West 18th Avenue, 292-2251

**100 Chemistry and Society** U 5

Terminology, methods, and principles of chemistry; examination of the roles of chemistry in our modern technological society.

Au, Sp Qtrs. 5 cl. Prereq: Math 075 or 076 or 102 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 101 or 121 or 204 or chem course having these as prereqs.

**101 Elementary Chemistry** U 5

A course in the principles of chemistry; the chemistry of the more important elements and compounds.

Su, Au, Wi, Sp Qtrs. 4 cl, 3 lab hrs. Prereq: Eligibility to enroll in Math 116. Not open to students with credit for 121, H201, or 204. Safety glasses must be worn in lab. This course is available for EM credit. BER/GEC/LAR course. NS Admis Cond course.

**102 Elementary Chemistry** U 5

Continuation of 101; a terminal sequence in chemistry for students requiring only two courses in chemistry; special attention is given to the compounds of carbon.

Au, Wi, Sp Qtrs. 4 cl, 3 lab hrs. Prereq: 101. Safety glasses must be worn in lab. This course is available for EM credit. BER/GEC/LAR course. NS Admis Cond course.

**121 General Chemistry** U 5

A general course in fundamental chemical principles.

Su, Au, Wi, Sp Qtrs. 4 cl, 3 lab hrs. Prereq: One unit of high school chem and eligibility to enroll in Math 150. Not open to students with credit for H201 or 204. Safety glasses must be worn in lab. This course is available for EM credit. BER/GEC/LAR course. NS Admis Cond course.

**122 General Chemistry** U 5

Continuation of 121; the chemistry of the most important non-metals and of chemical reactions in solutions.

Su, Au, Wi, Sp Qtrs. 4 cl, 3 lab hrs. Prereq: 121 or completion of 101 with a grade of A or A- and eligibility to enroll in Math 150. Not open to students with credit for H202 or 205. Safety glasses must be worn in lab. This course is available for EM credit. BER/GEC/LAR course. NS Admis Cond course.

**123 General Chemistry** U 5

Continuation of 122; the chemistry of the metals including introductory quantitative analysis.

Su, Au, Wi, Sp Qtrs. 3 cl, 6 lab hrs. Prereq: 122. Safety glasses must be worn in lab. This course is available for EM credit. BER/GEC/LAR course.

**125 Chemistry for Engineers** U 4

Principles of chemistry for engineering students.

Au, Wi, Sp Qtrs. 3 cl, 3 lab hrs. Prereq: 121; prereq or concur: Math 151; and fresh or soph standing. Not open to students with credit for 122 or 123. This course is available for EM credit. Safety glasses must be worn in lab.

**H201 General Chemistry** U 5

Fundamental chemical principles for selected students.

Au Qtr. 4 cl, 3 lab hrs. Prereq or concur: Math 151 and permission of instructor. Not open to students with credit for 121. Safety glasses must be worn in lab. BER/GEC/LAR course. NS Admis Cond course.

**H202 General Chemistry** U 5

Continuation of H201; fundamental principles and nonmetal chemistry.

Wi Qtr. 4 cl, 3 lab hrs. Prereq: H201. Safety glasses must be worn in lab. BER/GEC/LAR course. NS Admis Cond course.

**H203 General Chemistry** U 5

Continuation of H202; fundamental principles and chemistry of metals.

Sp Qtr. 3 cl, 6 lab hrs. Prereq: H202. Safety glasses must be worn in lab. BER/GEC/LAR course.

**211 Quantitative Analysis** U 3

A general course in quantitative analysis; gravimetric, volumetric, and instrumental analysis; primarily for those students with interest in biological and medical sciences.

Wi Qtr. 2 cl, 5-8 lab hrs. Prereq: 123 or equiv. Safety glasses must be worn in lab. BER/LAC course.

**221 Analytical Chemistry I** U 5

Analytical chemistry for chemistry majors; quantitative analysis of the elemental and molecular composition of complex systems.

Au, Wi, Sp Qtrs. 3 cl, 8 lab hrs. H221 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 123 or equiv and eligibility to enroll in Math 150. Safety glasses must be worn in lab. GEC course.

**231 Introductory Organic Chemistry** U 3

A condensed presentation of organic chemistry organized by functional groups with an emphasis on practical applications.

Sp Qtr. 4 cl. Prereq: 122. Not open to students with credit for 102 or 251.

**245 Organic Chemistry Laboratory** U 2

Introduction to the laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds.

Au, Wi, Sp, Su Qtrs. 1 cl, 5 lab hrs. Prereq or concur: 231 or 251. Not open to students with credit for 243 or 254. Safety glasses must be worn in lab.

**246 Organic Chemistry Laboratory U 2**

Preparation, isolation, purification, and identification of organic compounds such as are studied in 251 and 252.

Su, Wi, Sp Qtrs. 1 cl, 5 lab hrs. Prereq: 243 or 245; prereq or concur: 252. Not open to students with credit for 244 or 255. Safety glasses must be worn in lab.

**251 Organic Chemistry U 3**

Structure, nomenclature, physical properties, preparation, and reactions of hydrocarbons, alcohols, and ethers.

Au, Wi Qtrs. 4 cl. H251 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 123.

**252 Organic Chemistry U 3**

Chemistry of carbonyl compounds, acids and their derivatives, and amines and aromatic compounds.

Wi, Sp Qtrs. 4 cl. H252 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 251.

**253 Organic Chemistry U 3**

Selected topics in organic chemistry such as: carbohydrates, amino acids, nucleic acids, spectroscopic methods, polymers, and molecular orbital theory.

Su, Au, Sp Qtrs. 4 cl. H253 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 252.

**254 Organic Chemistry Laboratory U 3**

Introduction to the laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds.

Au, Wi Qtrs. 1 cl, 8 lab hrs. H254 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 251. Not open to students with credit for 243-244. Safety glasses must be worn in lab.

**255 Organic Chemistry Laboratory U 3**

Continuation of 254.

Wi, Sp Qtrs. 1 cl, 8 lab hrs. H255 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 254; prereq or concur: 252. Safety glasses must be worn in lab.

**294 Group Studies U 3-5**

Special studies in chemistry.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**520 Physical Chemistry U G 3**

The principles of physical chemistry for students in the biological sciences and for BA students majoring in chemistry.

Wi Qtr. 3 cl. Prereq: 211 or 221 or 251, Math 153, and Physics 113 or 133. Not open to students with credit for 521 or 531.

**521 Physical Chemistry U G 3**

A continuation of 520.

Sp Qtr. 3 cl. Prereq: 520. Not open to students with credit for 532.

**531 Physical Chemistry U G 3**

The fundamental course in physical chemistry.

Au Qtr. 3 cl. Prereq: 211 or 221 or 251, or equiv; Physics 113 or 133 and Math 254; prereq or concur: Math 255; and concur 541 recommended for chem majors.

**532 Physical Chemistry U G 3**

Continuation of 531.

Wi Qtr. 3 cl. Prereq: 531; concur 542 recommended for chem majors.

**533 Physical Chemistry U G 3**

Continuation of 532.

Sp Qtr. 3 cl. Prereq: 532.

**541 Physical Chemistry Laboratory U G 3**

Quantitative measurements of chemical phenomena and the application of chemical principles to their interpretation.

Au, Wi, Sp Qtrs. 1 cl, 8 lab hrs. Prereq or concur: 520 or 531. Safety glasses must be worn in lab.

**542 Physical Chemistry Laboratory U G 3**

Continuation of 541.

Au, Wi, Sp Qtrs. 8 lab hrs. Prereq: 541; prereq or concur: 521 or 532. Safety glasses must be worn in lab.

**585 Research Principles in Chemistry U 1-5**

Independent chemical investigation under the direction of a faculty member, culminating in written and oral reports.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 15 cr hrs in chem at the 200 level or above and written permission of instructor under whose direction the student will work. Repeatable to a maximum of 20 cr hrs.

**587 Analytical Chemistry II: Instrumental Analysis U G 3**

Applications of physico-chemical principles to problems of quantitative analysis.

Sp Qtr. 3 cl. Prereq or concur: 521 or 532, and 541.

**588 Laboratory Practice in Instrumental Analysis U G 2**

Laboratory applications of physico-chemical principles to instrumental analysis.

Sp Qtr. 2 3-hr labs. Prereq or concur: 587 or permission of instructor. Safety glasses must be worn in lab.

**623 Chemical Instrumentation U G 3 or 5**

Background theory and laboratory applications in the use of electrical and electronic instruments in chemical research.

Su Qtr. 2 cl, 9 or 15 lab hrs. Prereq: 533, prereq or concur Physics 133, and Math 255 or equiv.

**632 Spectroscopic Methods in Organic Chemistry U G 3**

Advanced spectroscopic methods in organic chemistry, including proton and carbon NMR, IR, UV, and mass spectrometry.

Sp Qtr. 3 cl. Prereq: 253 or permission of instructor.

**635\* Chemistry of the Carbohydrates U G 3**

Sp Qtr. 3 cl. Prereq: 252 or equiv. Repeatable to a maximum of 6 cr hrs with permission of instructor.

A— Monosaccharides. (Given in even-numbered yrs.)

B— Oligosaccharides and Polysaccharides. (Given in odd-numbered yrs.)

**651 Inorganic Chemistry I U G 3**

Introduction to the principles of inorganic structure and bonding, including molecular symmetry, atomic structure, molecular, and ionic bonding.

Au Qtr. 3 cl. Prereq: 253 or permission of instructor.

**652 Inorganic Chemistry II U G 3**

Chemistry of the transition metals, with emphasis on the stereochemistry, reaction mechanisms, and chemical reactivity of coordination complexes and organometallics.

Wi Qtr. 3 cl. Prereq: 651 or permission of instructor. Not open to students with credit for 751.

**661 Biochemistry U G 3**

A survey of biochemistry for the superior advanced undergrad or the beginning grad student who does not necessarily plan to do grad research in biochemistry.

Prereq: 253 and 521 or 532. Not recommended for students with grades of C or below in prereq courses.

**661.01 Biochemistry**

Au Qtr. 3 cl.

**661.02 Biochemistry**

Wi Qtr. 3 cl.

**671 Nuclear, Radio, and Radiation Chemistry U G 3**

Nuclear properties, nature of radioactivity, radioactive decay and growth, interactions of radiation with matter, applications.

Au Qtr. 3 cl. Prereq: 533 or equiv.

**673 Introduction to Quantum Chemistry and Spectroscopy U G 3**

Fundamental quantum chemistry with applications to molecular spectroscopy, suitable for all areas of chemistry.

Su Qtr. 3 cl. Prereq: 533 or equiv; or permission of instructor. Not open to students with credit for 861.

**693 Individual Studies U G 1-15**

A qualified student may conduct a minor investigation in chemistry.

Su, Au, Wi, Sp Qtrs. Conf, library, and lab. Prereq: Satisfactory courses in field of the problem and permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Designed for students to pursue advanced special studies in chemistry.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**721 Advanced Analytical Chemistry U G 3**

Chemical and instrumental aspects of modern methods of analysis, emphasizing commonly used contemporary techniques of value to the research chemist.

Au Qtr. 3 cl. Prereq: 587 or equiv or permission of instructor.

**722 Principles of Analytical Processes U G 3**

Speciation and multicomponent equilibria, analog versus digital data acquisition, applications of Fourier transforms, modeling chemical systems.

Wi Qtr. 3 cl. Prereq: 531.



**730 Intermediate Organic Chemistry U G 3**

Intermediate-level course for advanced undergraduates and beginning graduate students in organic reactions and mechanisms.

Au Qtr. 3 cl. Prereq: 253. Recommended for entering grad students in organic chemistry.

**731 Advanced Organic Chemistry I U G 3**

Fundamental aspects of physical organic chemistry.

Au Qtr. 3 cl. Prereq: 253, 521 or 533, or permission of instructor. 730, 731, 832, and 833 comprise the first-year graduate sequence.

**733 Chemistry of Bio-Organic Catalysts and Enzymes U G 3**

Mechanisms of organic catalysts and enzymes; for students majoring in organic chemistry and biochemistry.

Wi Qtr. 3 cl. Prereq: 253 or equiv; also desirable to have undergraduate level physical chemistry and biochemistry.

**751 Transition-Metal Organometallic Chemistry U G 3**

Preparation, structure and bonding, reactivity, and applications to stoichiometric synthesis and catalysis of transition-metal compounds that contain metal-carbon bonds, including metal carbonyls, pi complexes, and metal alkyls.

Au Qtr. 3 cl. Prereq: Permission of instructor or an undergrad degree with a major in chem.

**752 Inorganic Biochemistry U G 3**

Roles of metal ions as biological redox and catalytic cofactors; coordination chemistry; spectroscopy and electrochemistry.

Au Qtr. 3 cl. Prereq: 652 and undergraduate degree with a major in chemistry, or permission of instructor.

**753 Inorganic Cluster Chemistry U G 3**

Bonding, structures, and chemistry of cluster and ring compounds of the transition and main group elements with applications to heterogeneous catalysis and inorganic polymers.

Wi Qtr. 3 cl. Prereq: 652 and undergraduate degree with a major in chemistry, or permission of instructor.

**754 Solid State Inorganic Chemistry U G 3**

Survey of the principles and concepts underlying the synthesis, structure, bonding, reactivity, and properties of solids.

Sp Qtr. 3 cl. Prereq: 533 or equiv or permission of instructor.

**755 Inorganic Chemistry Laboratory U G 3**

Preparation and characterization of inorganic compounds employing a variety of synthetic techniques.

Wi Qtr. 9 lab hrs. Prereq: 533, permission of instructor, or an undergraduate degree with a major in chemistry. Safety glasses must be worn in lab. Not open to students with credit for 655.

**761 Advanced Biochemistry: Proteins U G 3**

An advanced treatment of protein biochemistry.

Au Qtr. 3 cl. Prereq: 253, 255, and 521; and Biochem 615; or equivs. Not open to students with credit for Biochem 705 or 761, or Physchem 705 or 761. Cross-listed in Biochemistry and Physiological Chemistry.

**762 Advanced Biochemistry: Enzymes U G 2**

Advanced treatment of enzymology.

Au Qtr. 2 cl. Prereq: 253, 255, and 521; and Biochem 615; or equivs. Not open to students with credit for Biochem 705 or 762, or Physchem 705 or 762. Cross-listed in Biochemistry and Physiological Chemistry.

**763 Advanced Biochemistry: Membranes and Bioenergetics U G 2**

An advanced treatment of membranes and bioenergetics.

Wi Qtr. 2 cl. Prereq: 253, 255, and 521; and Biochem 615; or equivs. Not open to students with credit for Biochem 707 or 763, or Physchem 707 or 763. Cross-listed in Biochemistry and Physiological Chemistry.

**764 Advanced Biochemistry: Integration of Metabolism U G 3**

An advanced treatment of the regulation and integration of mammalian biochemical systems.

Sp Qtr. 3 cl. Prereq: 253, 255, and 521; and Biochem 615; or equivs. Not open to students with credit for Biochem 764 or Physchem 764. Cross-listed in Biochemistry and Physiological Chemistry.

**765 Advanced Biochemistry: Physical Biochemistry U G 2**

Diffusion, electrophoresis, sedimentation; light and X-ray scattering, X-ray and neutron diffraction, fluorescence, polarimetry, mass spectroscopy, nuclear magnetic resonance.

Wi Qtr. 2 cl. Prereq: 253, 255, 521; and Biochem 615 or equivs. Not open to students with credit for Biochem 765 or Physchem 765. Cross-listed in Biochemistry and Physiological Chemistry.

**H783 Honors Research U 3-5**

Independent investigation in chemistry culminating in a thesis and an oral examination.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the chem courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Satisfactory completion of at least 8 cr hrs is required of candidates for an undergrad degree with distinction in chem. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**821 Electroanalytical Chemistry G 3**

Advanced level discussion of electrochemical principles and mass transport processes; discussion of applications to organic and inorganic systems.

Wi Qtr. 3 cl. Prereq: 533 or permission of instructor.

**822 Principles and Practice of Separation Processes G 3**

Principles and applications of equilibrium and kinetic separation processes such as precipitation, solvent extraction, ion exchange, liquid-liquid chromatography, gas-liquid chromatography, and zone refining.

Au Qtr. 3 cl. Prereq: 821 or permission of instructor.

**823 Analytical Spectroscopy G 3**

Advanced course in the principles of measurement of the interaction of electromagnetic radiation with matter.

Sp Qtr. 3 cl. Prereq: 821 or permission of instructor.

**832 Advanced Organic Chemistry II G 3**

An advanced course in the fundamental principles of chemistry covering alicyclic, hydroaromatic, and aromatic compounds.

Wi Qtr. 3 cl. Prereq: 731.

**833 Advanced Organic Chemistry III G 3**

An advanced course in the fundamental principles of chemistry covering a survey of heterocyclic compounds, carbohydrates, proteins, and enzymes.

Sp Qtr. 3 cl. Prereq: 832.

**835 Advanced Organic Chemistry Laboratory G 3 or 5**

An advanced course in fundamental reactions and procedures with emphasis on recent advances in technique.

Su Qtr. 9 lab hrs. Prereq: Permission of student's grad adviser. Safety glasses must be worn in lab.

**836 Advanced Organic Chemistry Laboratory G 3 or 5**

Continuation of 835.

Su Qtr. 9 lab hrs. Prereq: Permission of student's grad adviser. Safety glasses must be worn in lab.

**851 Advanced Inorganic Chemistry G 3**

A survey of modern theories of valence and their application to the problems of structural inorganic chemistry.

Sp Qtr. 3 cl. Prereq: 533 and 652 or 752 or permission of instructor.

**861 Quantum Chemistry I G 3**

Basic quantum mechanics as a foundation for quantum chemistry; postulates, operators, eigenfunctions, eigenvalues, and Schrodinger wave equations; one-dimensional problems including the harmonic oscillator.

Au Qtr. 3 cl. Prereq: 533, Math 255 or 415 or equiv, and Physics 133.

**862 Quantum Chemistry II G 3**

Angular momentum; matrix elements and representations; the hydrogenic atom; perturbation and variation methods, electron spin, and the helium atom; atomic structure and multiplet theory.

Wi Qtr. 3 cl. Prereq: 861 or equiv.

**863 Quantum Chemistry III G 3**

Electronic structure of molecules; hydrogen molecule and ion, methane, ethylene, benzene, etc.; molecular orbital, valence bond, and self-consistent field methods.

Sp Qtr. 3 cl. Prereq: 862.

**866 Electronic Spectra and Structure of Molecules G 3**

Application of quantum mechanics to the description and interpretation of molecular spectroscopic data with an emphasis on electronic transitions of polyatomic molecules.

Sp Qtr. 3 cl. Prereq: 863 or equiv or permission of instructor.

**875 Chemical Kinetics I G 3**

Fundamentals of chemical kinetics in homogeneous liquid and gaseous systems.

Au Qtr. 3 cl. Prereq: 533.

**876† Chemical Kinetics II G 3**

Continuation of 875; elementary reactions; chain reactions; fast reaction methods; reaction rates in heterogeneous systems.

Wi Qtr. 3 cl. Prereq: 875.

**877 Radiation and Photochemical Kinetics G 3**

The physical and chemical effects of the absorption of radiant energy, with emphasis on kinetics and mechanism.

Wi Qtr. 3 cl. Prereq: 875.

**881 Thermodynamics I G 3**

Introduction to thermodynamics; emphasis on training in the use of thermodynamics as a tool for solving chemical problems.

Wi Qtr. 3 cl. Prereq: 875 or equiv.

**882 Statistical Thermodynamics G 3**

An introduction to statistical thermodynamics, including quantum statistics, entropy and the third law, statistical-spectroscopic calculation of thermodynamic functions of gases, chemical equilibria, and vapor pressure.

Sp Qtr. 3 cl. Prereq: 881.

**885 Colloquium in Chemistry G**

A discussion of current research in chemistry; all divisions.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in chem. Required every qtr of all registered grad students in chem. This course is graded S/U.

**894 Group Studies G 3 or 4**

Provides an opportunity for innovation and experimentation on new problems in chemistry.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 8 cr hrs.

**941 Theoretical Organic Chemistry G 3**

An advanced course in a special topic in organic chemistry; topic to be announced.

Au Qtr. 3 cl. Prereq: 832 and 2nd yr grad standing, or permission of instructor.

**942 Theoretical Organic Chemistry G 3**

An advanced course in a special topic in organic chemistry; topic to be announced.

Wi Qtr. 3 cl. Prereq: 832 and 2nd yr grad standing, or permission of instructor.

**990 Seminar on Topics in Biochemistry G 3**

Advanced topics in the biological aspects of chemistry.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**991 Seminar in Analytical Chemistry G 3**

Topic to be announced.

Au Qtr. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**992 Seminar in Organic Chemistry G 3**

Topic to be announced.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 832 and chem 2nd yr grad standing; or equivs and permission of instructor. Repeatable to a maximum of 12 cr hrs.

**995 Seminar in Inorganic Chemistry G 3**

Topic to be announced.

Wi Qtr. 3 cl. Prereq: 752 or equiv and permission of instructor. Repeatable to a maximum of 6 cr hrs.

**996 Seminar in Theoretical Chemistry G 3**

Advanced topics in theoretical chemistry including quantum mechanics of molecular wave functions, energies, rate processes, and quantum and statistical mechanics of condensed phases.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 863 or equiv. Repeatable to a maximum of 9 cr hrs.

**999 Research in Chemistry G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Chinese

204 Cunz Hall, 1841 Millikin Road, 292-5816

**101 First Year Chinese I**

Basic elements of modern Chinese (Mandarin); the four tones, sentence structure, and Chinese characters (of which 500 will be learned in three qtrs).

Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Au Qtr. 5 cl. Students register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**101.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next with a demonstrated proficiency at the level of 80% required for advancement.

**102 First Year Chinese II**

Continuation of 101.

Prereq: 101 or 101.01 or 5 cr hrs of 101.51. Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Wi Qtr. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with a demonstrated proficiency at the level of 80% required for advancement.

**103 First Year Chinese III**

Continuation of 102.

Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Not open to students with credit for 103; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

**103.01 Classroom Track U 5**

Sp Qtr. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**103.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 104.01 or 104.51. Progress is sequential from one cr hr to the next with a demonstrated proficiency of 80% required for advancement to next level.

**104 Second Year Chinese I**

Four hundred additional characters, further combination of characters in three quarters; complex sentence structure; readings adapted from modern Chinese literature.

Prereq: 103 or 103.01 or 5 cr hrs of 103.51. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

**104.01 Classroom Track U 5**

Au Qtr. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**104.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: 103 or 103.01 or 5 cr hrs of 103.51. Students register for and complete 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 205. Progress is sequential from one cr hr to the next with a demonstrated proficiency of 80% required for advancement to the next level.

**110 Intensive First Year Chinese U 5, 10, 15**

Elementary modern Chinese (Mandarin) for students desiring comprehensive knowledge and skills of Chinese in shortest possible time.

Su Qtr. 15 cl. Prereq: Permission of instructor. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, 103. Not open to students with maximum allowable credit for 112. Students may not register for any other course if they enroll in 110. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in Chinese will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. FL Admis Cond course. GEC/LAR course.

**205 Second Year Chinese II U 5**

Continuation of 104.

Wi Qtr. 5 cl. Prereq: 104 or written permission of instructor. This course is available for EM credit.

**206 Second Year Chinese III U 5**

Continuation of 205.

Sp Qtr. 5 cl. Prereq: 205 or written permission of instructor. This course is available for EM credit.

**210 Intensive Second Year Chinese I U 5**

First course in the sequence of intensive intermediate Chinese courses; attention to the four language skills: listening, speaking, reading, and writing.

Au Qtr. 5 cl. Prereq: 103 or equiv, or permission of instructor; concur: 211. Not open to students with credit for 104, 111, or 205. Students must register for 210 and 211 concurrently.

**211 Intensive Second Year Chinese II U 5**

Second course in the sequence of intensive intermediate Chinese courses; attention to the four language skills: listening, speaking, reading, and writing.

Au Qtr. 5 cl. Prereq: 103 or equiv, or permission of instructor; concur: 210. Not open to students with credit for 104 or 205. Students must register for 210 and 211 concurrently.

**231 Traditional Chinese Culture U 5**

Chinese institutions, philosophical trends, religion, art, and literature prior to the 20th century.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. BER/GEC/LAR course.

**232 Modern Chinese Culture U 5**

Modern Chinese culture as reflected in family life, language, literature, art, etc.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. BER/GEC/LAR course.

**251 Chinese Literature in Translation U 5**

Representative masterpieces from 3,000 years of Chinese literature, fiction, drama, prose, and poetry in English translation.

Au, Wi, Sp Qtrs. 5 cl. BER/GEC/LAR course.

**283 Chinese Calligraphy U 3**

Techniques of writing Chinese characters with a brush; practice in different styles from oracle bone to grass.

Wi Qtr. 3 cl. Knowledge of Chinese not required. VPA Admis Cond course.

**293 Individual Studies U 1-5**

Individual investigation of problems in Chinese culture, language, and literature.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**310 Intensive Second-Third Year Chinese I U 5**

Fourth course in the sequence of intensive intermediate Chinese courses; use of authentic materials (selections from newspapers, radio broadcasts, television programs, etc.).

Wi Qtr. 5 cl. Prereq: 210 and 211 or equiv, or permission of instructor; concur: 311. Students must register for 310 and 311 concurrently.

**311 Intensive Second-Third Year Chinese II U 5**

Fifth course in the sequence of intensive intermediate Chinese courses; use of authentic materials (selections from newspapers, radio broadcasts, television programs, etc.).

Wi Qtr. 5 cl. Prereq: 210 and 211 or equiv, or permission of instructor; concur: 310. Students must register for 310 and 311 concurrently.

**501 Chinese Poetry in Translation U G 5**

Major genres of Chinese poetry from 600 B.C. to the 13th century A.D.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. BER/GEC/LAR course.

**502 Chinese Fiction in Translation U G 5**

Novels and short stories from the Ming and Qing dynasties.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. BER/GEC/LAR course.

**503 Modern Chinese Literature in Translation U G 5**

Chinese literature from the teens and twenties to the present day.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. BER/GEC/LAR course.

**504 Chinese Drama in Translation U G 5**

The development of Chinese drama from the Yuan dynasty to modern times.

Au, Wi, Sp Qtrs. 5 cl. Taught in English. BER/GEC/LAR course.

**507 Third Year Chinese I U G 5**

Reading of contemporary prose and verse, presentation of oral and written reports, drill in tone and intonation, practice in translation.

Au Qtr. 5 cl. Prereq: 206 or equiv with written permission of instructor.

**508 Third Year Chinese II U G 5**

Continuation of 507.

Wi Qtr. 5 cl. Prereq: 507 or permission of instructor.

**509 Third Year Chinese III U G 5**

Continuation of 508.

Sp Qtr. 5 cl. Prereq: 508 or permission of instructor.

**510 Intensive Third Year Chinese I U G 5**

Sixth course in the sequence of intensive intermediate Chinese courses; organized around a set of videotaped lessons (television news, commercials, movies) and a series of game-specific samples of Chinese.

Sp Qtr. 5 cl. Prereq: 310 and 311 or equivs, or permission of instructor; concur: 511.

**511 Intensive Third Year Chinese II U G 5**

Seventh course in the sequence of intensive intermediate Chinese courses; organized around a set of videotaped lessons (television news, commercials, movies) and a series of game-specific samples of Chinese.

Sp Qtr. 5 cl. Prereq: 310 and 311 or equivs, or permission of instructor; concur: 510.

**514 Advanced Chinese Conversation and Composition U 3**

Practice in conversation, discussion, oral reports, and short speeches at an advanced level; use of various taped materials; theme-writing exercises; conducted entirely in Chinese.

Au Qtr. 3 cl. Prereq: 214 and 508, or permission of instructor.

**580 The Chinese Language: Description and Analysis U G 5**

Important elements of the Chinese language, its structure, dialects, writing system, as well as language use and planning; taught in English.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 206 or equiv and jr or sr standing, or permission of instructor. GEC/LAR course.

**601 Classical Chinese I U G 5**

Selected readings from representative authors of classical times.

Au Qtr. 5 cl. Prereq: 206 or equiv with written permission of instructor.

**602 Classical Chinese II U G 5**

Continuation of 601.

Wi Qtr. 5 cl. Prereq: 601 or equiv with written permission of instructor.

**603 Classical Chinese III U G 5**

Continuation of 602.

Sp Qtr. 5 cl. Prereq: 602 or equiv with written permission of instructor.

**610 Fourth Year Chinese I U G 5**

Integrated-skill course focussing on reading and composition which requires participation in speaking and lecture comprehension.

Au Qtr. 3 1½ cl. Prereq: 509, or 510 and 511, or written permission of instructor.

**611 Fourth Year Chinese II U G 5**

Multi-media based study of authentic Chinese texts which trains students to speak, listen, read, and write about how language is used and when it is culturally appropriate.

Wi. Qtr. 5 cl. Prereq: 610 or written permission of instructor.

**612 Fourth Year Chinese III U G 5**

Multi-media based study of authentic Chinese literary texts which trains students to speak, listen, read, and write in the discourses of Chinese culture and cultural studies.

Wi. Qtr. 5 cl. Prereq: 611 or written permission of instructor.

**651 History of Chinese Literature I U G 5**

Chinese literature from antiquity to the end of Six Dynasties; various aspects of the classical tradition and new developments in the Age of Disunity.

Wi Qtr. 2 2-hr cl. Prereq: Written permission of instructor. Taught in English. Partial texts in Chinese optional. Open to nonmajors.

**652 History of Chinese Literature II U G 5**

Chinese literature from *Sui* to the present; literary trends and achievements of the *Sui-T'ang* period; rise of vernacular writings; modern literature under western impact.

Sp Qtr. 2 2-hr cl. Prereq: Written permission of instructor. Taught in English. Partial texts in Chinese optional. Open to nonmajors.

**674 Chinese Opera U G 5**

An introduction to Chinese (Peking) opera as dramatic literature and performing art; study of selected plays and illustrated discussions of various aspects of the theatre.

Sp Qtr. 5 cl.

**680 Introduction to Chinese Linguistics U G 5**

Investigation of the phonology, morphology, syntax, lexicon, and writing system of the Chinese language.

Wi Qtr. 2 2-hr cl. Prereq: 103 and Linguist 601, or permission of instructor.

**681 History of the Chinese Language U G 5**

An investigation of the relations between modern Chinese and its earlier stages, ancient and archaic Chinese.

Sp Qtr. 2 2-hr cl. Prereq: 680 or permission of instructor.

**683 Study of the Chinese Writing System U G 5**

A critical study of the origin, classification, composition, and development of the Chinese writing system, including problems in simplification and alphabetization.

Wi Qtr. 3 cl. Prereq: 103 or permission of instructor.

**690 Chinese Translation Workshop U G 3**

Investigations of problems and techniques of translating Chinese into English and English into Chinese; practice of translation of selected passages; individual assignments and group discussion.  
Sp Qtr. 2 cl. Prereq: 509 and 603, or equivs with written permission of instructor.

**693 Individual Studies U G 1-5**

Directed study to meet individual research needs of students in area studies and East Asian programs.

Su, Au, Wi, Sp Qtrs. Prereq: 509 or 603, and written permission of instructor. Repeatable to a maximum of 15 cr hrs. Not a substitute for regular language courses. This course is graded S/U.

**694 Group Studies U G 1-5**

Investigation of minor problems in Chinese language and literature.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. Not a substitute for regular language courses.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****751 Selected Readings in Scholarly Chinese Texts I U G 3**

Academic writings in the humanities and social sciences by modern Chinese scholars in both the wen-yen and pai-hua styles.

Au Qtr. 3 cl. Prereq: 509 or permission of instructor.

**752 Selected Readings in Scholarly Chinese Texts II U G 3**

Continuation of 751.

Wi Qtr. 3 cl. Prereq: 751 or permission of instructor.

**753 Selected Readings in Scholarly Chinese Texts III U G 3**

Continuation of 752.

Sp Qtr. 3 cl. Prereq: 752 or permission of instructor.

**761\* Modern Chinese Poetry U G 3**

Lectures and readings covering major poets since 1919.

Au Qtr. 3 cl. Prereq: 652 or permission of instructor.

**762\* Modern Chinese Prose U G 3**

Studies of various types of prose literature of the May Fourth Movement and the Communist period.

Sp Qtr. 3 cl. Prereq: 652 or permission of instructor.

**763\* Modern Chinese Fiction U G 3**

Works by major authors before and after 1949.

Wi Qtr. 3 cl. Prereq: 652 or permission of instructor.

**764\* Modern Chinese Drama U G 3**

Lectures on and readings in works by major 20th-century playwrights including Hung Shen and Ts'ao Yü.

Wi Qtr. 3 cl. Prereq: 652 or permission of instructor.

**782\* Chinese Phonology U G 3**

Mandarin phonology and Chinese dialectology.

Sp Qtr. 3 cl. Prereq: 681 or permission of instructor.

**H783 Honors Research U 3-5**

A program of reading arranged for each student, with individual conferences, reports, and honors thesis.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a grade of A in at least half of Chinese courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Failure to receive a mark of S in this course is a disqualification for special honors. Open only to Chinese majors. This course is graded S/U.

**784\* Chinese Syntax U G 3**

An investigation of the syntactic structure of Mandarin Chinese.

Sp Qtr. 3 cl. Prereq: 680 or 681 or permission of instructor.

**785 Modern Chinese Dialects U G 3**

Investigation of the phonology, morphology, lexicon, and syntax of the major modern Chinese dialects from a cross-dialectal, comparative approach.

Au, Wi, Sp Qtrs. 2 1½-hr cl. Prereq: 680 or permission of instructor.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**800 Chinese Bibliography and Research Methods G 3**

An introduction to bibliographies and reference works in the Chinese humanities; general and specific problems for research.

Wi Qtr. 3 cl. Prereq: 509 and 603, or equivs with written permission of instructor.

**801 Teaching Chinese at the College Level G 5**

Methods and techniques of teaching college-level Chinese; selection and preparation of teaching, testing, and laboratory materials; observation of a variety of language classes.

Au Qtr. Two wks intensive workshop previous to qtr followed by a 2-hr wkly cl. Prereq: Permission of instructor. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs.

**804 Advanced Classical Chinese I G 3**

Designed for further study of the syntax and vocabulary of classical Chinese; texts are selected from literature, history, and philosophy.

Au Qtr. 3 cl. Prereq: 603 or equiv with written permission of instructor.

**805 Advanced Classical Chinese II G 3**

Continuation of 804.

Wi Qtr. 3 cl. Prereq: 804.

**806 Advanced Classical Chinese III G 3**

Continuation of 805.

Sp Qtr. 3 cl. Prereq: 805.

**871\* Traditional Chinese Poetry G 5**

Lectures and readings from ancient odes and songs and the later *shih* and *tz'u* poetry.

Au Qtr. 2 2-hr cl. Prereq: 651 and 652, or permission of instructor.

**872\* Traditional Chinese Prose G 5**

Lectures on and readings in various types of non-fiction prose in *ku-wen* and *yu-lu-t'i* styles of early times.

Sp Qtr. 2 2-hr cl. Prereq: 651 and 652, or written permission of instructor.

**873\* Traditional Chinese Fiction G 5**

Lectures and readings in classical and vernacular fiction.

Au Qtr. 2 2-hr cl. Prereq: 651 and 652, or permission of instructor.

**874\* Traditional Chinese Drama G 5**

A lecture and reading course in Yuan, Ming, and Ch'ing drama.

Sp Qtr. 2 2-hr cl. Prereq: 651 and 652, or permission of instructor.

**875\* Chinese Literary Criticism G 5**

The historical development of critical theories, with concentration on major critics.

Sp Qtr. 2 2-hr cl. Prereq: 3 Chinese literature courses at the 700 level or above, or equiv with written permission of instructor.

**879 Seminar in Chinese Literature G 3-5**

An intensive reading course in Chinese literature with a selected topic for each offering and research projects for individual students; topic to be announced.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**882\* Studies in Chinese Historical Phonology G 5**

Critical study of the rhyming dictionaries, the reconstruction of the phonology of old Chinese and its relations to modern Chinese dialects.

Sp Qtr. 2 2-hr cl. Prereq: 782 or permission of instructor.

**884\* Studies in Chinese Historical Syntax G 3**

Problems of Chinese historical syntax; grammatical structures of classical Chinese; syntactic rules found in selected texts from various ancient writings.

Sp Qtr. 3 cl. Prereq: 784 or permission of instructor.

**889 Seminar in Chinese Linguistics G 3-5**

Topics include the history of Chinese linguistics and related areas, specific studies in Chinese dialects, etc.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**998 Research in Chinese: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Chinese: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Circulation Technology

School of Allied Medical Professions

152 School of Allied Medical Professions Building, 1583 Perry Street, 292-7261

**400 The Aseptic Environment U 5**

An introduction to the aseptic environment with emphasis on the student's function within this environment as a member of the medical-surgical team. Tallman.

Au Qtr. 2 cl, 2 3-hr labs. Prereq: Permission of instructor.

**410 Applied Circulation Technology—Cardiovascular U 5**

The presentation of cardiovascular physiology, pathology, and treatment of cardiovascular disease including the use of extracorporeal devices. Beckley.

Au Qtr. 5 cl. Prereq: Written permission of instructor.

**412 Applied Circulation Technology—In Vitro Lab U 4**

The study of various extracorporeal devices and techniques in a controlled in vitro laboratory environment. Beckley.

Au Qtr. 1 6-hr lab, 1 2-hr conf. Prereq: Written permission of instructor.

**413 Applied Circulation Technology—In Vivo Lab U 4**

The study of various extracorporeal devices and techniques in a controlled in vivo laboratory environment. Beckley.

Au Qtr. 1 6-hr lab, 1 2-hr conf. Prereq: Written permission of instructor.

**415 Applied Circulation Technology—Physiological Principles U 5**

The presentation of cardiac, respiratory, and renal physiology and their relationship to extracorporeal devices and technology. Tallman.

Wi Qtr. 5 cl. Prereq: Permission of instructor.

**420 Circulation Technology Instrumentation U 5**

The application of mechanical and electronic principles to the instrumentation unique to circulation technology with emphasis on design and selection of equipment.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: Written permission of instructor.

**430 Clinical Management of the Cardiac Patient U 3**

The presentation of cardiac anatomy, pathophysiology, and diagnosis and treatment of cardiac disease including the use of extracorporeal devices. Beckley.

Wi Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**550 Research Methodology U 7**

Lectures and demonstrations relating circulation technology to research methodology with emphasis on new developments in this area. Tallman.

Sp Qtr. 5 2-hr cl. Prereq: 420 or permission of instructor; concur 551.

**551 Research Methodology Laboratory U 8**

Application of circulation technology methods to the solution of research problems. Tallman.

Sp Qtr. 5 4-hr clinical experiences. Prereq: 420 or permission of instructor; concur: 550.

**560 Surgical Support Systems: Phase I U 5**

Case studies relating circulation technology to the clinical use of extracorporeal devices and monitoring instrumentation in surgery. Beckley.

Wi Qtr. Prereq: 410 and 420 or permission of instructor.

**561 Surgical Support Systems—Clinical Experience: Phase I U 10**

Clinical experience in the preparation and operation of extracorporeal circulation devices and monitoring instrumentation in surgery. Beckley.

Wi Qtr. Arr. Min: 40 hrs/wk. Prereq: 410 and 420 or permission of instructor.

**570 Surgical Support Systems: Phase II U 5**

Case studies relating circulation technology to the clinical use of extracorporeal circulation devices and monitoring instrumentation in surgery. Beckley.

Sp Qtr. 5 cl. Prereq: 560 and 561; or permission of instructor; concur: 571.

**571 Surgical Support Systems—Clinical Experience: Phase II U 10**

Clinical experience in the preparation and operation of extracorporeal circulation devices and monitoring instrumentation in support of surgery. Beckley.

Sp Qtr. Arr. Min 40 hrs/wk. Prereq: 560 and 561, or permission of instructor.

**593 Individual Studies in Circulation Technology U 1-5**

Clinical, laboratory, or research experiences by individual arrangement for qualified students.

Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**595 Seminar in Circulation Technology U 1-5**

Conferences, group discussions, and presentations of selected topics.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 6 cr hrs.

## City and Regional Planning

289 Brown Hall, 190 West 17th Avenue, 292-4075

**310 Introduction to City and Regional Planning U 4**

Introduction to fundamental concepts, including physical planning, transportation, housing, land use, urban development, and preservation.

Au, Wi, Sp Qtrs. 4 cl.

**320 Planning for Housing U 4**

An introduction to the American housing system, evolution of housing programs, and selected topics in planning for housing in urban and regional contexts.

Wi Qtr. 4 cl.

**330 Planning and Urban Design U 4**

Introduction to the use of concepts related to urban design and to the planning process.

Wi Qtr. 4 cl.

**597 City Planning in the Contemporary World U 5**

Urban shelter and service delivery in developed/developing and capitalist/socialist regions of the world; role of income, jobs, and planning in housing.

Sp Qtr. 2 2-hr cl. Prereq: Sr standing. Not open to students with credit for 425. GEC/LAR course.

**643 American City Planning since 1900 A.D. U G 4**

Introduction to current American city planning processes and urban form through historic evolution of urban problems and related urban planning systems since 1900.

Sp Qtr. 2 cl, 1 lab hr. Complements 642. Not open to students with credit for 300 or 743 or 811.

**694 Group Studies U G 1-5**

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 10 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for Ohio State students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**702\* Urban Planning Graphics U G 2**

Rudiments of graphic techniques employed most frequently in practice; basic drafting, printing processes, report preparation, and related subjects.

Wi Qtr. 1 cl, 2 lab hrs. Prereq: Grad standing in c&r plan or permission of instructor.

**710\* Introduction to Urban and Regional Planning for Open Space, Recreation, and Conservation U G 3**

Review of leisure and recreational activities with associated design criteria, definition of the need for open space, and exploration of workable programs for its preservation and development.

Sp Qtr. 2 cl.

**712 Theory of City and Regional Planning U G 4**

Planning processes; the general plan; formulating goals; land development policies and decisions; alternative urban and regional forms; role and scope of planning.

Au Qtr. 4 cl. Not open to students with credit for 812.

**720 Introduction to Analysis of Energy Factors in City and Regional Planning U G 3**

Covers the resource, technological, environmental, economic, and institutional dimensions related to coal, natural gas, electricity, solar, geothermics, environmental impacts, and energy conservation in cities.  
Wi Qtr. 2 cl.

**721 Seminar on Mathematical Models of Energy Management and Planning U G 3**

Mathematical models in coal, electricity, energy storage and curtailment, solar energy, energy/environment interactions, and comprehensive urban and regional energy planning.  
Au Qtr. 2 cl. Prereq: 770.

**722 Introduction to Analysis and Use of Environmental Factors in City and Regional Planning U G 3**

Introduction to application and utilization of environmental considerations in the formulation of land use policy and development plans.  
Au Qtr. 2 cl. Prereq: 745 or permission of instructor.

**731 Outlines of Urban Design U G 3**

Urban design as an area of specialization in urban planning; theories and processes in urban design; evaluation of criteria.  
Sp Qtr. 3 cl.

**732 Urban Planning and Urban Form: Psychological Functions U G 3**

Urban planning for the organization and character of the physical environment as significant variables in psychological processes basic to effective individual functioning; emphasis on implications for urban design.  
Wi Qtr. 3 cl.

**733 Urban Planning and Urban Form: Social Functions U G 3**

Urban planning for the organization and character of the physical environment as significant variables in social processes basic to effective individual functioning; emphasis on implications for urban design.  
Wi Qtr. 3 cl.

**734 Research and Analytic Methods for Urban Designers U G 3**

Use of research and analytic methods in assisting the urban designer in problem formulation, search, prediction, evaluation, and choice.  
Sp Qtr. 2 cl.

**735\* Programming Environments for Human Use U G 3**

Introduction to user oriented environment programming for planners and designers; application of several methods for specifying the characteristics required of an environmental setting to support user behavior.  
Sp Qtr.

**740+\* Introduction to Planning in Developing Countries G 5**

Survey of development issues and their planning response related to population growth and distribution, income and poverty, urbanization and migration, and housing and infrastructure.  
Au Qtr. 2 2-hr cl.

**741 Urban Sector and Project Planning in Developing Countries G 5**

Issues in urban sector planning with a focus on housing and service delivery, including financial intermediation, municipal finance and cost recovery, local administration, and urban land.  
Wi Qtr. 2 2-hr cl. Prereq: 740 or equiv.

**745 Physical Element of Urban Development U G 5**

Physical components of urban areas; residential, commercial, industrial, pedestrian, and vehicular circulation; other community facilities; analysis of design criteria and standards.  
Au Qtr. 3 cl, 3 lab hrs. Not open to students with credit for 845.

**746\* Managing the Urban Spatial Environment: Regulatory Techniques U G 3**

Physical planning, environmental and urban design policy design and implementation in central city and suburban settings; emphasis on innovative regulatory approaches.  
Wi Qtr. 2 cl.

**749 Studio in Planning for Developing Countries G 5**

A studio with group projects on planning issues in developing countries.  
Sp Qtr. 4 cl. Prereq: 741.

**750 Resolving Social Conflict G 4**

A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflicts.

Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in Business Administration: Interdisciplinary and Natural Resources.

**752 Urban Planning for Housing U G 3**

Introduction to urban planning issues related to housing with regard to urban structure, markets, reform, suburbanization, new towns, urban renewal, and rehabilitation.  
Au Qtr. 3 cl.

**753 Outlines of Regional Planning U G 3**

State, national, and regional planning; components of regional development; regional analysis and design.  
Au Qtr. 3 cl. Not open to students with credit for 813.

**755 State Planning of Regional Growth and Development U G 3**

Rationale for state intervention in regional economics, growth centers and neoclassical models, development planning in foreign countries; comparison and evaluation of models and evidence.  
Wi Qtr. 3 cl. Prereq: 753 or equiv with written permission of instructor. Not open to students with credit for 820.

**761 Land-Use Controls U G 4**

Legal basis of land-use controls in the United States, provisions, procedures and issues in zoning, subdivision regulation, urban renewal, building and housing codes, and acquisition of real property for public use.  
Wi Qtr. 3 cl. Not open to students with credit for 861.

**762 Urban Planning Data and Forecasting U G 5**

Sources of information, data handling, forecasting, and basic studies in urban planning.  
Sp Qtr. 3 cl, 6 lab hrs. Prereq: 770 or permission of instructor. Not open to students with credit for 832.

**763 Consequence Analysis in Urban Planning U G 4**

Urban planning studies using cost-benefit, cost-effectiveness, systems analysis, and PPBS approaches.  
Au Qtr. 2 cl, 2 lab hrs. Prereq: 770 or permission of instructor.

**764 City Planning Administration U G 4**

Administration of official urban planning agencies; zoning administration; subdivision review practices; capital improvement programming; budget and work program preparation.  
Au Qtr. 4 cl. Not open to students with credit for 862.

**765\* Social Policy Law U G 4**

Studies of law and social policy; topics vary.  
Sp Qtr. 4 cl. Not open to students with credit for 865.

**766 Environmental Planning Law U G 4**

The interaction between law and environmental planning and protection.  
Au Qtr. 4 cl. Prereq: 761 or equiv with written permission of instructor. Not open to students with credit for 866.

**770 Introduction to Quantitative Methods in Urban Planning U G 4**

Introduction of mathematical models in urban planning; descriptive statistics, probability, decision theory, and use of digital computer.  
Au Qtr. 4 cl. Prereq: Permission of instructor.

**771 Applications of Quantitative Methods in Urban Planning U G 4**

Applications of statistical analysis in urban planning; hypothesis testing and parameter examination methods; computer analysis of urban planning data.  
Wi Qtr. 4 cl. Prereq: 770.

**775 Urban Transportation Planning U G 4**

Discussion and examples of urban transportation planning processes, emphasizing quick-response models of locational and travel behavior, development and evaluation of alternatives, policies, and citizen reaction and participation.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Civil En 670 or equiv with written permission of instructor or grad standing in c&r plan. Not open to students with credit for Civil En 775. Cross-listed in Civil Engineering.

**776 Topics in Urban Transportation and Planning U G 3**

Survey of major topics in urban transportation planning, emphasizing policy concerns and analytical tools necessary to address these concerns.  
Wi Qtr. 1 2-hr cl. Prereq: 770 or equiv; 781 or equiv; or permission of instructor.

**777\* Transportation Regulation U G 3**

Current U.S. transport regulation and tools needed to evaluate its desirability.  
Sp Qtr. 1 2-hr cl. Prereq: 770 or equiv; 781 or equiv; or permission of instructor.

**780 Workshop in Urban and Regional Planning Techniques U G 3-5**

Techniques in the urban and regional planning process: spatial distribution and management of population and economic growth in the city and the region, stressing the applied aspects of the techniques as used in the profession.

Sp Qtr. Prereq: 770 or permission of instructor.

**781 Spatial Models in Urban Planning U G 4**

Urban planning applications of theories of spatial equilibrium and rent theory; impacts on spatial distribution of zoning, property taxation, and infrastructural investment.

Sp Qtr. 4 cl. Not open to students with credit for 880.

**793 Individual Studies in Urban Planning U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**794 Group Studies in Urban Planning U G 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs.

**815 Case Studies in Urban Planning for Housing G 4**

Review of empirical studies in urban planning for housing including aspects of density, spatial production, housing services, and price formation.

Wi Qtr. 2 cl, 2 lab hrs. Prereq: 752 or permission of instructor.

**816 Seminar in Urban Planning for Housing G 3**

Presentation and discussion of research related to urban planning for housing, including theoretical studies, modeling, simulation, and statistical testing.

Sp Qtr. 3 cl. Prereq: 752 or permission of instructor.

**821 Regional Planning Studio G 5**

Application of economic and environmental analysis to regional development projects.

Sp Qtr. 2 cl, 3 lab hrs. Prereq: 723. Repeatable to a maximum of 10 cr hrs.

**834 Decision Analysis in Urban Planning G 3**

Application of decision theory and analysis to case studies in urban planning.

Sp Qtr. 3 cl. Prereq: 770.

**835\* Land Use, Environmental Quality, and Regional Analysis G 4**

Introduction of land use and environmental models as tools in the planning process and as techniques for improving the quality of physical development plans.

Sp Qtr. Prereq: 770 or equiv or permission of instructor.

**851 Urban Precinct Planning G 5**

Preparation of detailed physical development plans for a small section of a city.

Au Qtr. 3 cl, 6 lab hrs. Prereq: 745 or 762 or permission of instructor.

**852 Urban Project and Policy Planning G 5**

Identification of options among planning policies and projects; development of analyses to aid in making choices between options in urban development.

Wi, Sp Qtrs. 2 cl, 9 lab hrs. Prereq: 745 or 762.

**853 The Urban General Plan G 5**

Current practice in preparation of the urban general plan; laboratory exercise in the preparation of a general plan for an urban community.

Wi Qtr. 3 cl, 6 lab hrs. Prereq: 745, 762, and 781; or permission of instructor.

**864 Urban Planning Theory Seminar**

Review of contemporary urban planning programs; analyses of objectives and strategies.

**864.01 Urban Planning Theory Seminar: History of Planning Thought G 5**

Examination of how planning thought evolved in relation to different stages of our civilization.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**864.02\* The Political Process of Planning G 5**

Examination of the relationship of planning to the political process and governmental activity.

Wi Qtr. 2 2-hr cl. Prereq: 864.01 or permission of instructor.

**864.03\* Planning in Market Oriented Systems G 5**

The role of planning within a system whose primary orientation is to allocate goods and services via markets.

Sp Qtr. 2 2-hr cl. Prereq: 864.01 or permission of instructor.

**867\* Land Use Policy G 4**

Law and administration in land use planning programs.

Sp Qtr. Prereq: 761 or permission of instructor.

**870\* Research on Quantitative Methods in Urban Planning G 5**

Workshop application of quantitative planning methods to an urban or regional planning problem.

Au, Wi, Sp Qtrs. 1 cl, 3 lab hrs. Prereq: 770 or permission of instructor. Repeatable to a maximum of 9 cr hrs. Not open to students with cr for 870.

**870.01 Static Optimization in Planning**

The use of mathematical programming techniques to solve planning problems.

Au Qtr. 2 2-hr cl, arr. Prereq: Permission of instructor and Math 568 or equiv.

**870.02 Dynamic Optimization in Planning**

Provides advanced graduate students with a sound foundation on a set of quantitative planning techniques in a dynamic context.

Wi Qtr. 2 2-hr cl. Prereq: 870.01 and Math 255 or equiv.

**870.03 Forecasting and Simulation in Planning**

Overview of advanced methods in forecasting and simulation and application to urban and regional planning.

Sp Qtr. 2 2-hr cl. Prereq: 762 and 771, or permission of instructor.

**871 Research Seminar in Environmental Planning**

Au, Wi, Sp Qtrs. 1 2-hr cl, arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**871.01 Research Seminar in Environmental Planning G 5**

Processes and concepts for the design planning and management of the natural and built environment.

Not open to students with credit for 871.

**871.02 Research Seminar in Development Planning G 5**

Research problems associated with urban and regional development including economic development, planning in developing countries, and related issues; topics vary.

Not open to students with credit for 872.

**871.03 Research Seminar in Regional Science G 5**

Development of theoretical and methodological issues in regional science as they pertain to urban and regional planning.

Not open to students with credit for 873.

**871.04 Research Seminar in Planning Processes G 5**

Institutional factors which affect the field of planning; topics vary.

Not open to students with credit for 874.

**871.05 Research Seminar in Mathematical Planning G 5**

Developmental topics in mathematical planning, and its applications to selected planning problems.

Not open to students with credit for 875.

**871.06 Research Seminar in Energy Planning G 5**

Developmental topics in energy planning and its application to selected energy problems.

Not open to students with credit for 876.

**871.07 Research Seminar in Transportation Planning G 5**

Survey of current literature, structured around a general theme which varies.

Not open to students with credit for 877.

**871.08 Research Seminar in Public Services Planning G 5**

In-depth review of selected recent literature in the field; focus varies.

Not open to students with credit for 878.

**879 Seminar in Planning Research G 1-5**

Topics to be announced each quarter.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**881\* Foundations of Spatial Modelling in Planning G 5**

Analysis of behavioral foundations of spatial models.

Sp Qtr. 2 2-hr cl arr. Prereq: 781 recommended.

**893 Individual Studies G 1-5**

Individual studies for Ph.D. students in city and regional planning.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**990 Urban Planning Practicum G 1-5**

Supervised field experience in urban planning; analysis and critique of field experience.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in c&r plan. Repeatable to a maximum of 5 cr hrs.

**998 Research in City and Regional Planning Master's Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.



**999 Research in City and Regional Planning PhD  
Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: PhD standing. Repeatable. This course is graded S/U.

## Civil Engineering

470 Hitchcock Hall, 2070 Neil Avenue, 292-2771

**402 Surveying and Measurements in Civil Engineering U 4**

Introduction to surveying and measurement theories for civil engineering practice.

Au, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq or concur: 405, minimum CPHR of 2.00, and civil en major or written permission of dept chairperson.

**405 Observational Analysis U 4**

Theory and application of observational analysis.

Au, Sp Qtrs. 4 cl. Prereq: Chem 121, En Graph 142 or 167, Eng Mech 210 or 220, Math 254, Physics 133, and a minimum CPHR of 2.00, and standing as a civil en major or written permission of dept chairperson.

**406 Fundamentals of Civil Engineering Analysis U 4**

Application of numerical methods to problems in civil engineering.

Wi Qtr. 4 cl. Prereq or concur: 405, minimum CPHR of 2.00, and standing as a civil en major or written permission of dept chairperson.

**410 Environmental Pollution and Control U 3**

Environmental pollution: the causes and control of air, water, and land pollution in relation to their effects on health, aesthetics, economics, and ecology.

Wi Qtr. 3 cl. Prereq: Chem 101 or equiv with written permission of instructor. Not open to engineering majors or students with credit for 714.

**413 Fluid Mechanics U 4**

Fluid properties; fluid statics; flow concepts; continuity, energy, and momentum equations; dimensional analysis and dynamic similarity; viscous effects; drag; basic pipe flow; lab demonstrations and experiments.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Eng Mech 410 or 430; prereq or concur: Civil En 405 or standing as Agr Eng major; minimum CPHR of 2.0; or written permission of dept chairperson.

**431 Structural Engineering Principles U 3**

Structural forms, analysis of statically determinate structures, approximate analysis of indeterminate structures, and moving loads.

Au, Wi Qtrs. 3 cl. Prereq: Eng Mech 420 or 440; prereq or concur: Civil En 405; minimum CPHR of 2.00, and standing as a civil en major or written permission of dept chairperson.

**451 Civil Engineering Materials U 4**

Composition and structure of civil engineering materials; elastic, plastic, and viscous behavior under various environmental and loading conditions.

Au, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq or concur: 405, Eng Mech 420 or 440; minimum CPHR of 2.00, and standing as a civil en major or written permission of dept chairperson.

**460 Professional Aspects of Civil Engineering U 1**

Structure of the civil engineering profession; interaction of civil engineers with the education process, their clients, other professions and the public.

Wi, Sp Qtrs. 1 cl. Prereq: Civil en 4th yr standing. This course is graded S/U.

**489 Professional Practice U 2**

Actual employment in a co-op program job and the preparation of a comprehensive report based on a pre-arranged outline and a pre-assigned topic.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to co-op program in civil en. Repeatable to a maximum of 8 or hrs. This course is graded S/U.

**510 Principles of Hydraulics U G 3**

Fluid properties; hydrostatics; flow concepts; continuity, energy, and momentum equations and applications; flow measurements, pipe and channel flow.

Au, Sp Qtrs. 3 cl. Prereq: Math 151 and Physics 111 or 131. Not open to students with credit for 413. Majority of course will be conducted using self-paced programmed instruction manual.

**516 Water Resources Engineering U G 4**

Pipe systems, introduction to open channel flow, basic hydrology, demographic studies, water supply, and wastewater flows.

Wi Qtr. 4 cl. Prereq: 413 and En Graph 143 or En Graph 167.

**519 Applied Hydraulics U G 3**

Experimental and design laboratory for water supply collection, transmission, distribution and measurement systems, sewage and storm water collection, and disposal and measurement systems.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 516.

**520 Design of Treatment Facilities U G 4**

Selection and design of processes for the purification of natural and used waters.

Sp Qtr. 4 cl. Prereq: 413 and Chem 123 or 125.

**531 Structural Analysis U G 4**

Deflections in trusses, beams, and frames; solution of indeterminate structures by methods of consistent deformations, and moment distribution.

Au Qtr. 4 cl. Prereq: 431.

**532 Structural Steel Design U G 4**

Design of steel structures.

Au Qtr. 4 cl. Prereq: 431.

**533 Timber Engineering U G 4**

Basic properties of and design practice for timber when used as a construction material in engineering structures.

Au Qtr. 4 cl. Prereq: 532 or 534 or 535. Not open to students with credit for 732.

**534 Behavior of Structural Elements U G 4**

Mechanics of beams, shear center, unsymmetrical bending, columns, plastic bending, limit loads, properties of structural metals, and proportioning beams for flexure.

Sp Qtr. 4 cl. Prereq: 431.

**535 Basic Reinforced Concrete Design U G 5**

Analysis and proportioning of reinforced concrete members.

Sp Qtrs. 5 cl. Prereq: 431.

**540 Civil Engineering Systems U G 4**

Basic concepts and methods of systems engineering and applications to civil engineering problems in transportation and water resources planning, structural design, and construction management.

Au Qtr. 4 cl. Prereq: 405.

**552 Construction Materials U G 4**

Composition, properties, and production of portland cement concrete, bituminous materials, and bituminous mixtures.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 451.

**554 Geotechnical Engineering U G 4**

Properties of natural soil deposits and subsoil exploration; engineering solutions to problems of slope stability, foundation settlement, and earth pressure.

Sp Qtr. 4 cl. Prereq: Eng Mech 420 or 440; prereq or concur: Civil En 405; or standing as agricultural engineering major, or written permission of dept chairperson.

**570 Transportation Engineering and Analysis U G 4**

Introduction to topics in transportation engineering and analysis; geometric design, traffic flow, freeway capacity, traffic signals, demand-performance equilibrium, pricing, and design under uncertainty.

Wi Qtr. 4 cl. Prereq: Eng Mech 410 or 430; prereq or concur: Civil En 405, minimum CPHR of 2.00, and standing as civil en major, or written permission of dept chairperson.

**576 Civil Engineering Economics and Planning U G 4**

Engineering economics and theories of planning applied to private and public civil works.

Wi Qtr. 4 cl. Prereq or coreq: 406.

**603 Remote Sensing of Environment U G 4**

The energies of the natural and cultural environment; current remote sensing systems and case histories of applications in measuring the environment.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Geod Sci 603. Cross-listed in Geodetic Science.

**604 Terrain Analysis U G 4**

Principles and applications of photo pattern analysis, geologic and geomorphologic patterns, terrain studies, and land use suitability and capability mapping.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Geod Sci 604. Cross-listed in Geodetic Science.

**606+ Quantitative Remote Sensing U G 4**

An introduction to computer processing of digital image data from Landsat satellites; emphasis on concepts, techniques, and statistics important to numerical analysis.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 405 or equiv, 603 or 604 or 605, and En Graph 200 or equiv.

**610 Analysis of Natural and Polluted Waters U G 5**

A laboratory study of the measurement and interpretation of water quality indices and pollution parameters including BOD, COD, alkalinity, nutrients, pH, and heavy metals.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: Chem 125 or 205 and Math 152 or equiv.

**613 Applied Hydrology U G 4**

Hydrologic cycle, meteorology, streamflow, evapotranspiration, hydrographs, runoff relations, runoff hydrographs, groundwater, unit hydrographs, flood routing, frequency and duration studies, and application of hydrologic techniques.

Au Qtr. 4 cl. Prereq: 510 or 516.

**618 Environmental Pollution U G 4**

Problems, principles, causes and control of pollution in the local, regional and global environment. Quantitative approaches to environmental problems in air, water, and land systems.

Wi Qtr. 4 cl. Prereq: Sr level standing & 15 hrs Natural science. Not open to students with credit for Natural Resources 618, Zoology 618 or Mech Eng 618. Cross-listed in Natural Resources.

**624 Coastal and Ocean Engineering U G 4**

Linear and nonlinear waves, water level and wave forecasting spectra, forces on fixed structures; beach processes, littoral drift, and transport; shoreline protection.

Wi Qtr. 4 cl. Prereq: 516.

**651 Soil Mechanics U G 4**

Stress-strain properties and shear strength of soils; settlement and stability analyses. Wu.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 554.

**653 Principles of Rock Mechanics U G 4**

Engineering properties of rock and their measurement; in-situ stresses; analysis of rock slopes, tunnels, underground openings, and foundations. Sp Qtr. 3 cl, 1 1-hr lab, 1 1-day field trip. Prereq: 554. Not open to students with credit for Mng Engr 653.

**662 Introduction to Mechanics of Composite Structures U G 4**

An introduction to the macromechanical analysis of anisotropic composite structures including governing constituent equations, strength and stiffness advantages, and failure envelopes.

Au, Sp Qtrs. 4 cl. Prereq: Eng Mech 440 or equiv, or permission of instructor. Not open to students with credit for Eng Mech 662 or Mech Eng 662. Cross-listed with Engineering Mechanics and Mechanical Engineering.

**670 Urban Public Transportation U G 4**

Planning, analysis, and operation of urban public transportation systems; description and analysis of novel systems.

Au Qtr. 4 cl. Prereq: 570 or equiv with written permission of instructor.

**672 Traffic Engineering Studies U G 3**

Methods of collecting and analyzing traffic flow data, parking, driver and pedestrian behavior; reduction and evaluation of traffic data for applications in traffic engineering.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: 570 or equiv with written permission of instructor.

**673 Highway Location and Design U G 4**

Methods of highway route location; design standards for highways, intersections, freeways, and interchanges; discussion of computer programs for highway design.

Wi Qtr. 4 cl. Prereq: 570 or equiv with written permission of instructor.

**674 Airport Design and Operation U G 4**

Airport configuration, design, and capacity; development of the terminal area; operational aspect of air traffic and the terminal area; design and operation of heliports.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 570 or equiv with written permission of instructor.

**681 Construction Methods, Equipment and Performance U G 3**

Procedures, testing, and quality control in concrete operations; analysis of formwork and false work performance; advanced methods in the construction of hi-rise buildings, bridges, and other structures.

Au Qtr. 2 cl, 1 3-hr lab and field trip. Prereq: 431.

**682 Fault, Failures, and Forensics U G 3**

Causes of construction failures/accidents; investigative construction/structural failures; forensic engineering.

Sp Qtr. 2 cl, 1 3-hr lab and field trips. Prereq: 431.

**684 Construction Network Analysis U G 4**

Planning, scheduling, and supervision of engineering construction projects; use of Critical Path Method, bar charts, and other techniques.

Wi Qtr. 2 cl, 2 2-hr lab. Prereq: 540.

**685 Deterministic Construction Estimating and Pricing U G 4**

Generally accepted models and methods of estimating and pricing; identification of causes of underestimating and underpricing.

Au Qtr. 2 2-hr cl. Prereq: 576.

**686 Construction Contracts and Claims U G 4**

Contract documents and specifications; formulation of contracts; offer, acceptance, breach, and damages; responsibilities and liabilities; claims; labor agreements.

Wi Qtr. 2 2-hr cl. Prereq or concur: 576 or equiv with written permission of instructor.

**687 Construction Project Administration U G 4**

Duties of professional construction managers in project administration; CM practices and methods; practical forms for project and office use.

Sp Qtr. 2 2-hr cl. Prereq: 576.

**693 Individual Studies U G 3-5**

Individual conferences, assigned readings, and reports on minor investigations.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies in Civil Engineering U G 1-5**

The student must register for particular topics from fields of civil engineering listed below; the topics, cr hrs, and instructors will be announced in quarter previous to the quarter offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs, not more than 10 of which shall be in any one of the following fields.

A— Structural Engineering

B— Geotechnical Engineering

C— Sanitary Engineering

D— Highway and Transportation Engineering

E— Remote Sensing and Environmental Surveys

F— Construction

G— Materials

I— Hydraulics and Hydrology

**711 Biological Processes for Used Water Treatment U G 5**

Principles and design of biological processes for used water treatment.

Wi Qtr. 5 cl. Prereq: 520 or equiv. Not open to students with credit for 811.

**713 Water Quality and Environmental Measurements U G 4**

The application of advanced physical and chemical measurement and calculation techniques to environmental engineering problems.

Wi Qtr. 4 cl. Prereq: 610 or permission of instructor.

**715\* Water Resource Systems: Water Supply U G 5**

Regional and municipal water supply design and management; water use, law, demand, pricing, supply alternatives, and allocation; and optimal system and component design.

Sp Qtr. 5 cl. Prereq: 516 and 540.

**717 Municipal and Industrial Solid Waste Management U G 5**

Characterization and sources of solid wastes; solid waste management; collection systems; processing; disposal; and recycle.

Sp Qtr. 5 cl. Prereq: 520.

**719 Water Quality Modeling U G 4**

Stream and effluent standards for beneficial uses, and computer modeling of pollutant impacts on rivers. Sykes.

Au Qtr. 4 cl. Prereq: 520 or equiv with written permission of instructor.

**721 Design of Hydraulic Structures U G 4**

Basic engineering economic studies, water laws, design concepts, reservoir engineering, river training, spillways, and dissipators; hydromachinery.

Sp Qtr. 4 cl. Prereq: 516.

**722 Open Channel Hydraulics U G 4**

Flow classifications, channel properties, energy and momentum principles, critical flow, uniform flow formulas, erodible and nonerodible channel design, and gradually varied flow profile computations.

Sp Qtr. 4 cl. Prereq: 516.

**723 Transport Phenomena in Water Resources Engineering U G 4**

Water environment momentum mass energy transport, laminar and turbulent mixing; applications include river and lake pollutant dispersal, heated effluent plumes, eutrophication processes.

Au Qtr. 4 cl. Prereq: 516 and Math 255 or 415, or equivalents. Not open to students with credit for 614.

**731 Intermediate Reinforced Concrete Design U G 4**

Analysis and design of reinforced concrete systems.

Au Qtr. 4 cl. Prereq: 535.

**734 Structural Analysis and Design for Dynamic Disturbances U G 5**

Structural dynamics; principles and practice of dynamic design; numerical and graphical methods.

Au Qtr. 5 cl. Prereq: or concur: 532, Eng Mech 410, and grad standing, or sr standing with permission of instructor. Not open to students with credit for 834.

**735 Matrix Structural Analysis U G 4**

Analysis of skeletal structures by force and displacement methods using matrices.

Wi Qtr. 4 cl. Prereq: 531 or equiv with written permission of instructor.

**736 Bridge Engineering U G 4**

Principles and methods used in design and construction of bridge structures. Sp Qtr. 4 cl. Prereq: 531, 532, and 535; or equivalents.

**737 Prestressed and Precast Concrete Structures U G 4**

Structural analysis and proportioning of prestressed concrete members and precast structural concrete systems.

Wi Qtr. 4 cl. Prereq: 531 and 532.

**738 Intermediate Structural Steel Design U G 5**

Structural behavior in the inelastic range; plastic analysis and design of framed structures; load and resistance factor design of steel structures.

Wi Qtr. 5 cl. Prereq: 531 and 532.

**739 Knowledge-Based Systems in Engineering U G 3**

Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation.

Wi, Sp Qtrs. 2 1-1/2-hr cl. Prereq: Cptr/Inf 630 or permission of instructor. Cross-listed in Computer and Informational Science; Chemical, Mechanical, and Nuclear Engineering.

**750 Seepage in Permeable Materials U G 4**

Analysis of seepage; saturated and partially saturated flow; free surface analysis; introduction to numerical techniques.

Au Qtr. 4 cl. Prereq: 406 and 554.

**751 Principles of Foundation Analysis and Design U G 4**

Subsurface exploration; shallow foundations; piles and caissons; and embankments and excavations.

Wi Qtr. 4 cl. Prereq: 651.

**753 Pavement Design and Materials U G 4**

Properties of paving mixtures, cementing binder and mixtures, and principles of pavement design and performance evaluation.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 552.

**754 Mechanical Properties of Engineering Materials U G 4**

Elasticity, plasticity, viscoelasticity, fatigue, and fracture phenomena for civil engineering materials.

Au Qtr. 4 cl. Prereq: 451.

**760 Civil and Environmental Engineering Planning U G 5**

Water resource planning process, benefit-cost analysis; environmental, economic, and social impacts of civil engineering projects; project selection; and case studies in water resources, transportation, and energy.

Sp Qtr. 5 cl. Prereq: 516.

**762 Structural Composites U G 3**

An introduction to the analysis and design synthesis of beams, columns, rods, plates, and panels made of structural composites.

Wi Qtr. 3 cl. Prereq: 662 or Eng Mech 662 or Mech Eng 662 or permission of instructor. Not open to students with credit for Mech Eng 762 or Eng Mech 762. Cross-listed in Engineering Mechanics and Mechanical Engineering

**763 Introduction to the Finite Element Method U G 4**

Basic concepts, formulation, and application of finite element techniques for numerical solution of problems in structural and continuum mechanics, geotechnical engineering, and water resources engineering.

Au, Wi Qtrs. 4 cl. Prereq: 406 or Math 568 or equiv, and En Graph 167 or equiv. Not open to students with credit for Eng Mech 763. Cross-listed in Engineering Mechanics.

**774 Design and Operation of Road Traffic Facilities U G 5**

Traffic laws and ordinances; operational design of streets, intersections, parking, and terminal facilities; design and operation of traffic control devices.

Wi Qtr. 4 cl, 1 3-hr lab. Prereq: 672.

**775 Urban Transportation Planning U G 4**

Discussion and examples of urban transportation planning processes, emphasizing quick-response models of locational and travel behavior, development and evaluation of alternatives, policies, and citizen reaction and participation.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 576 and 670 or equivs with written permission of instructor or grad standing in c&r plan. Not open to students with credit for C&R Plan 751 or 775. Cross-listed in City and Regional Planning.

**781 Construction Risk and Decision Analyses U G 3**

Risk analysis and quality assurance; decision analysis using utility and fuzzy set concepts; Carlo simulation and regression analyses.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 405 and 681.

**795 Seminar in Civil Engineering U G 1**

Lectures and discussions of current topics related to civil engineering presented by faculty, students, and guest speakers; term paper required.

Au, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

A— Structural Engineering

B— Geotechnical Engineering

C— Sanitary Engineering

D— Highway and Transportation Engineering

E— Remote Sensing and Environmental Surveys

F— Construction

G— Materials

I— Hydraulics and Hydrology

**796 Interdepartmental Seminar Urban Transportation U G 1-5**

Lectures and discussions by faculty and guest speakers on topics related to urban transportation problems, issues, and new approaches to solutions; term paper required.

Au, Sp Qtrs. Prereq: Sr standing or permission of instructor. Repeatable to a maximum of 6 cr hrs. Given cooperatively by Civil Engineering and Industrial and System Engineering.

**797 Interdepartmental Seminars U G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Sp Qtr. Repeatable by permission.

**798 Current Topics in Environmental Science and Engineering U G 1**

Seminar course which presents current research findings on environmental quality and pollution control.

Au, Sp Qtrs. 1 cl. Prereq: Grad standing in engineer, science, nat res, or agr, or permission of instructor. Not available for simultaneous credit for Agronomy 798 or Nat Res 798. Repeatable to a maximum of 3 cr hrs. Cross-listed in Agronomy and Natural Resources.

**804 Water Resources Engineering Applications of Remote Sensing G 5**

Principles and techniques of remote sensing for acquisition of data in water resources engineering projects and water quality investigations.

Sp Qtr. 3 cl, 2 3-hr labs. Prereq: 719 or 820.

**806 Radiometric Measurements and Modeling G 5**

Theory and models used in remote sensor measurements of spectral radiation.

Au Qtr. 5 cl. Prereq: 603 or Geod Sci 603, and 604 or Geod Sci 604.

**808+ Integrating Remote Sensing with Engineering Databases G 5**

Techniques and approaches for integrating digital data sources with engineering spatial databases.

Sp Qtr. 5 cl. Prereq: Civil En/Geod Sci 603 or 606 or written permission of instructor.

**810+ Physical Water and Wastewater Treatment Processes G 3**

Principles and design of physical processes for water and wastewater treatment including screening, sedimentation, mixing, flotation, and filtration. Stiefel.

Au Qtr. 3 cl. Prereq: 518 or 520, prereq or concur: 610.

**812 Chemical and Advanced Wastewater Treatment Processes G 5**

Principles of physical-chemical treatment processes for water and wastewater, including coagulation, softening, adsorption, nutrient removal, and disinfection.

Sp Qtr. 4 cl, 1 3-hr lab. Prereq: 713 or permission of instructor.

**814 Industrial Wastewater Treatment G 3**

Principles of industrial wastewater treatment including wastewater surveys; flow reduction, and segregation and equalization; batch and continuous treatment; instrumentation; and treatment processes.

Au Qtr. 3 cl. Prereq: 811, prereq or concur: 812.

**815\* Advanced Water Resource Systems: Water Quantity G 5**

Advanced topics in the design and management of surface and groundwater systems; use of mathematical programming, simulation, and economic theory; written and oral presentations.

Sp Qtr. 5 cl. Prereq: 715.

**816 Environmental Systems Analysis G 5**

Optimization models for water quality and air quality control, solid waste and hazardous waste management, and environmental and energy facility siting.

Au Qtr. 5 cl. Prereq: 540 or Ind Eng 842 or equiv. Not open to students with credit for 720.

**817 Applied Mathematical Ecology G 5**

Application of the methods of mathematical ecology to problems of environmental engineering.

Wi Qtr. 5 cl. Prereq: Permission of instructor. Not open to students with credit for 885I. Cross-listed in Natural Resources.

**820\* Advanced Hydrology G 5**

Advanced analysis of classical concepts; study of new techniques and concepts developing in modern hydrology; written and oral presentations of critical reviews of current literature.

Wi Qtr. 5 cr. Prereq: 613 or equiv.

**821\* Sediment Transport and Engineering G 4**

Sediment properties, fall velocity; entrainment, resuspension, bed features, meanders, channel roughness, suspended, and bed load; measurement; siltation ponds, reservoirs, channel mechanics, bank protection, and stabilization. Bedford.

Sp Qtr. 4 cl. Prereq: 723.

**823 Numerical Models in Water Resources Engineering G 5**

Lake, river, and coastal contaminant or heat numerical transport model formulation; averaging; finite difference, element methods; errors, stability; data requirements, verification procedures.

Wi Qtr. 5 cl. Prereq: 723 or permission of instructor.

**824\* Advanced Coastal Engineering G 4**

Coastal turbulent transport processes; fluctuation spectra; flood forecasting, storm surge models; harbor oscillations, resonance, and design; erosion processes and protection strategies; topical problems as required.

Sp Qtr. 4 cl. Prereq: 624 and 723.

**830 Earthquake Engineering G 5**

Analysis and design of structures subject to seismic loading; design of structures to minimize earthquake damage; highrise buildings; seismic risk analysis; knowledge engineering in earthquake engineering. Adeli.

Wi Qtr. 5 cl. Prereq: 734.

**831 Advanced Reinforced Concrete G 5**

Concrete structural analysis and design; special structural systems and elements.

Au Qtr. 5 cl. Prereq: 731 and 737.

**832 Advanced Behavior and Design of Metal Structures G 5**

Design of steel structures; steel bridges; braced and unbraced frames; tall buildings; connections; load and resistance factor design; computer-aided design; stability of metal structures; torsion; and lateral-torsional buckling.

Sp Qtr. 5 cl. Prereq: 532 and 738.

**833 Concrete Shell Structures G 5**

Analysis and design of folded plate, cylindrical shell, axisymmetric and doubly curved shell structures including domes, hyperbolic and elliptical paraboloids.

Sp Qtr. 5 cl. Prereq: 735 and Math 512.

**836\* Advanced Matrix Analysis of Structures G 5**

General force methods of analysis; formulation of non-linear behavior of trusses and frames; solution of non-linear structures; analysis of surface structure; application of finite element methods in structural analysis.

Sp Qtr. 5 cl. Prereq: 735.

**837 Advanced Structural Dynamics G 5**

Stresses and deflections in structures under dynamic loads; response of large structural systems to earthquake, wind, moving loads; approximate and exact solution techniques.

Sp Qtr. 5 cl. Prereq: 734 or Eng Mech 731.

**838\* Two-Dimensional Problems in Linear Solids G 4**

Solution of two-dimensional boundary value and initial boundary value problems for linear solids; geometric nonlinearities; refined theories; variational principles; approximate and exact solution techniques.

Wi Qtr. 4 cl. Prereq: 856 and Eng Mech 740 and 754.

**839 Finite Element Method in Engineering Science G 5**

Approximation of boundary value and initial value problems; variational methods, hybrid and mixed method; convergence and accuracy of finite element approximations; recent developments, advanced applications.

Sp Qtr. 5 cl. Prereq: 763 or Eng Mech 763 and Math 601 or equiv. Not open to students with credit for Eng Mech 839. Cross-listed in Engineering Mechanics.

**850 Advanced Seepage in Permeable Materials G 4**

Analysis of seepage and consolidation in soils by closed form and by numerical methods. Moore.

Au Qtr. 4 cl. Prereq: 750.

**851 Advanced Soil Properties G 4**

Detailed study and analysis of the mechanical properties of soils, with applications to foundation behavior.

Au Qtr. 4 cl. Prereq: 651.

**852 Advanced Civil Engineering Materials G 4**

Analysis and design of materials for pavements and other civil engineering projects; properties considered include fracture, fatigue, and physical-chemical composition.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 753 and 754.

**853 Advanced Soil Mechanics G 4**

Stability of slopes and foundations; use of plasticity theory, numerical methods, and probability methods.

Wi Qtr. 4 cl. Prereq: 851.

**855\* Soil-Structure Interaction G 4**

Interactions between soil and various structures, walls, bulkheads, foundations, and piles.

Au Qtr. 4 cl. Prereq: 851.

**856 Viscoelasticity G 4**

Viscoelastic materials and their characteristics, discrete element models, spectral representation, creep and relaxation functions, and dynamics of viscoelastic behavior.

Wi Qtr. 4 cl. Prereq: 754 and Math 512.

**858 Soil Dynamics G 4**

Stress waves in soils and vibrations in soil masses; liquefaction, determination of dynamic properties of soils; soil behavior under impact, machine, and seismic loads; seismic response of earth structures; design problems.

Sp Qtr. 4 cl. Prereq: 851 and Eng Mech 731, or permission of instructor.

**859 Advanced Soil Properties Laboratory G 2**

Experimental methods to evaluate the engineering properties of soils.

Wi Qtr. 1 cl, 1 3-hr lab. Prereq or concur: 851.

**862 Advanced Mechanics of Structural Composites G 3**

An introduction to current important topic areas in structural composites; among these topics are fracture mechanisms and models, energy method modeling, dynamic structural response, and numerical modeling schemes.

Sp Qtr. 3 cl. Prereq: 762 or Eng Mech 762 or Mech Eng 762. Not open to students with credit for Eng Mech 862 or Mech Eng 862. Cross-listed in Engineering Mechanics and Mechanical Engineering.

**872 Area Traffic Control G 5**

Design and performance criteria for area traffic control; design of traffic surveillance and monitoring systems; corridor and network control strategies; on-line computer control algorithms.

Sp Qtr. 4 cl, 1 3-hr lab. Prereq: 774 or equiv.

**873 Urban Transportation Demand Forecasting G 5**

Travel surveys and data needs; applications of statistical methods to develop models of ownership, trip generation, vehicle occupancy and modal choice; disaggregate models.

Sp Qtr. 4 cl, 1 3-hr lab. Prereq: 775 and Stat 525 or equiv with written permission of instructor.

**874 Urban Transportation Network Analysis G 5**

Network representation methods; minimum-path trees; traffic assignment algorithms and their performance; trip distribution models; new directions.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 775 and Stat 525 or equiv with written permission of instructor. Not open to students with credit for Ind Eng 874. Cross-listed in Industrial and Systems Engineering.

**882 Probabilistic Construction Estimating and Pricing G 5**

New models and methods of estimating and pricing; the examination of data from contracting companies; the utility of percentile distributions, skewness and kurtosis demonstrations.

Sp Qtr. 3 cl, 6-hrs lab. Prereq: 685, Stat 525, and Bus Adm 801.05 or equivs.

**883\* Design of Construction Operations G 5**

Computer assisted construction operations decisions; traditional approaches; linear optimization and simulation case studies.

Au Qtr. 3 cl, 6-hrs lab. Prereq: 882.

**884\* Construction Forensics G 5**

Construction engineers as expert witnesses and consultants on prevention and resolution of disputes; investigations, pre-trial examination; governmental and private sector case studies.

Au Qtr. 3 cl, 6-hrs lab. Prereq: 882 and 888.

**885 Advanced Civil Engineering G 3-5**

Opportunity for advanced students to pursue advanced study; work undertaken may be elected in the fields of civil engineering listed below.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 20 cr hrs with not more than 10 in any one of the fields listed below.

- A— Structural Engineering
- B— Geotechnical Engineering
- C— Sanitary Engineering
- D— Highway and Transportation Engineering
- E— Remote Sensing and Environmental Surveys
- F— Construction
- G— Materials
- J— Hydraulics and Hydrology

**888 Construction Safety and Reliability G 5**

Various stochastic models for construction reliability; logical deductive tree analyses for construction safety; fuzzy set and fuzzy logic concepts.

Sp Qtr. 4 cl, 1 3-hr lab (arr). Prereq: 781.

**894 Group Studies in Civil Engineering G 3-5**

Advanced topics in the various fields of civil engineering; the particular topics, the number of credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs with not more than 10 in any one field of civil engineering.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

**990 Civil Engineering Practicum G 1-5**

Supervised field experience in civil engineering; analysis and critique of field experience.

Su, Au, Wi, Sp Qtrs. Prior approval of civil en grad committee required.

**993 Advanced Problems in Civil Engineering G 3-5**

Provides the opportunity to pursue special problems in Civil Engineering not otherwise covered. Report required.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 hrs. This course is graded S/U.

**999 Research in Civil Engineering G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U

## Classics

414 University Hall, 230 North Oval Mall, 292-2744

See also Greek, Latin, and Medieval and Renaissance Studies.

**101 Masterpieces of Greek Literature in Translation U 5**

Introductory survey of the Greek achievement in literature and its contribution to Western thought; selected readings in English translation in major authors from Homer through the Hellenistic age.

Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 220. BER/GEC/LAR course.

**102 Masterpieces of Latin Literature in Translation U 5**

Introductory survey of Roman literature and its importance in the Western literary tradition; selected readings in English translation in major authors, such as Plautus, Vergil, and Ovid.

Wi Qtr. 5 cl. Not open to students with credit for 221. BER/GEC/LAR course.

**150 Latin and Greek Elements in English Vocabulary U 3**

Study of the flow of Latin and Greek elements into English vocabulary and of the processes of word formation using these elements.

Wi Qtr. 3 cl.

**210 Classical Background of Scientific Terminology U 3**

Study of technical and scientific terms from Greek and Latin sources; roots, word elements, word formation, analysis; helpful in medical, biological, and kindred studies.

Su, Au, Wi, Sp Qtrs.

**222 Classical Mythology U 5**

Origins and attributes of the Greek and Roman gods and goddesses, their mythology and its influence on Western culture.

Au, Wi, Sp Qtrs. 5 cl. H222 (honors) may be available in Sp Qtr to students enrolled in an honors program or by permission of dept. H222 requires English 110 or 111 or equiv. Not open to students with credit for H122. H222 fulfills in part the ASC LAR advanced English composition requirement. BER/GEC/LAR course.

**224 Classical Civilization: Greece U 5**

A survey of ancient Greek civilization, concentrating upon important facets of literature, history, art, and archaeology.

Wi Qtr. 5 cl. H224 (honors) may be available in Wi Qtr to students enrolled in an honors program or by permission of dept. H224 requires English 110 or 111 or equiv. Not open to students with credit for H124. H224 fulfills in part the ASC advanced English composition requirement. BER/GEC/LAR course.

**225 Classical Civilization: Rome U 5**

A survey of the civilization of ancient Rome, concentrating upon important facets of literature, history, art, and archaeology.

Au Qtr. 5 cl. H225 (honors) may be available in Wi Qtr to students enrolled in an honors program or by permission of dept. H225 requires English 110 or 111 or equiv. Not open to students with credit for H125. H225 fulfills in part the ASC advanced English composition requirement. BER/GEC/LAR course.

**240 Classical Archaeology U 5**

Introduction to the principles, methods, and history of archaeological investigation in the ancient Greek and Roman world, illustrated through a selection of major classical sites.

5 cl. Not open to students with credit for History 240 or Hist Art 240. Cross-listed in History and History of Art. BER/GEC/LAR course.

**294 Group Studies U 1-5**

Topics in classical studies.

H294 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**301+ Greek and Roman Epic U 5**

Study of Greek and Roman epic based on extensive readings in English translation.

Au Qtr. 5 cl. Not open to students with credit for 503. BER/LAC course.

**302 Greek and Roman Drama U 5**

Study of Greek and Roman drama based on extensive readings in English translation.

Wi Qtr. 5 cl. Not open to students with credit for 501. BER/LAC course.

**303 Comic Spirit in Antiquity U 5**

Study of the comic literature of the Greco-Roman world based on extensive readings in English translation drawn from epic, drama, satire, and the novel.

5 cl. Not open to students with credit for 502. BER/LAC course.

**322 The Hero in Classical Mythology U 5**

The development and interpretation of the major cycles of classical saga based on extensive readings in Greek and Roman epic and drama.

5 cl. Prereq: 222. Not open to students with credit for 223.

**323+ Religion in the Greco-Roman World U 5**

Study of Greek and Roman religious movements including the beginnings of Christianity; readings in English translation of the major primary texts.

5 cl. Not open to students with credit for 504.

**505+ Political Thought and Institutions in the Greco-Roman World U G 5**

Selected topics concerning the development of ancient political theory.

2 2-hr cl.

**506+ Greek and Roman Science and Technology U G 5**

The origins and achievements of Greek and Roman science and technology.

5 cl.

**508 Women in Greece and Rome U G 5**

Roles of women in ancient society, literature, and art.

Sp Qtr. 5 cl.

**611+ Studies in Greek or Latin Epigraphy U G 5**

2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for 811. Repeatable to a maximum of 10 cr hrs.

**692 Workshop U G 1-6**

Su Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**694 Group Studies U G 1-5**

Investigation of particular problems in various areas of classical studies.  
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****699 Senior Tutorial and Essay U 5**

Individual work leading to the writing of a final paper that will integrate the experience of earlier courses in classics.

Su, Au, Wi, Sp Qtrs. Open only to srs majoring in classics.

**H783 Honors Research U 3-5**

A program of study arranged for each student, with individual conferences, reports, and an honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the classics courses taken and with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs with permission of dept.

**800 Materials and Methods of Research G 3**

The materials, problems, and methods of classical research.

3 cl. Required of all grad students.

**801 Materials and Methods of College Teaching of Classics G 3**

Methods and techniques for teaching Latin, Greek, and courses in classical subjects at the college level.

Two wks intensive workshop previous to the beginning of qtr. This course is graded S/U.

**810† Linguistic Studies in Greek and Latin G 5**

Topics may include Greek dialects, Italic dialects, or comparative grammar of Greek and Latin.

2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**812† Studies in Greek or Latin Paleography and Textual Criticism G 5**

A study of Greek or Latin handwriting in ancient documents and later manuscripts and the principles of textual criticism.

1 3-hr cl. Repeatable to a maximum of 10 cr hrs.

**856† Studies in Greek or Roman Topography G 5**

The topography and archaeology of ancient Athens, Rome, or other sites important to Greco-Roman literature and civilization.

2 2-hr cl. Repeatable to a maximum of 10 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

## Communication

3016 Derby Hall, 154 North Oval Mall, 292-3400

See also Speech and Hearing Science.

**105 Communication of Ideas and Attitudes U 5**

Analysis, formulation, organization, development, and delivery of ideas and attitudes for speaking with an audience.

Su, Au, Wi, Sp Qtrs. 5 cl. VPA Admis Cond course.

**110† Small Group Communication U 5**

Designed to help the student develop the skills necessary for effective communication in the small group by providing task related group activities.  
5 cl. VPA Admis Cond course.

**140† The Telecommunication and Electronic Media Environment: Issues and Ethics U 5**

Processes of electronic media and telecommunication, critical consumption of media, ethical issues and current media problems, and uses and abuses of telecommunication in society.

5 cl. Not open to students with credit for 115. SS Admis Cond course.

**209 Introduction to Interpersonal and Organizational Communication U 3**

Perspectives on the nature of communication and application of theory to interpersonal relations, persuasion, small groups, and organizations.

Au, Wi, Sp Qtrs. 3 cl. BER/LAC/LAR course.

**213 Rhetoric of Western Thought U 5**

Rhetorical theories as they reflected and affected society from Greece to modern times; relations to logic, ethics, and poetics; the classical tradition versus sophistical concepts.

Au, Wi, Sp Qtrs. 5 cl. H213 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. BER/LAC/LAR course.

**240 Overview of Telecommunication and Electronic Media U 3**

Introduction to structure and functions of telecommunication and electronic media industries; audience uses, gratifications of media, and telecommunication; and effects on individuals, groups, societies, and cultures.

Au, Wi, Sp Qtrs. 3 cl. Not open to students with credit for 220.

**260 Introduction to Communication in Culture and Society U 3**

An introductory examination of the ways in which communication institutions, systems, and practices both hold power relations in place and serve social change.

Au, Wi, Sp Qtrs. 3 cl.

**280 Internship in Communication U 1-5**

On-the-job internships in communication practice or research conducted under supervision of internship coordinator through the department's undergraduate advising office.

Au, Wi, Sp, Qtrs. Prereq: Communic major; minimum CPHR of 2.50; and soph standing or above. Repeatable to a maximum of 6 cr hrs including cr hrs earned in 205. This course is graded S/U.

**302 Introduction to Rhetorical Analysis U 5**

Survey of contemporary approaches to rhetorical criticism.

Au, Sp Qtrs. 5 or 2 2½-hr cl. Prereq: English 110 or 111 or equiv, and soph standing.

**305 Argumentation and Debate U 5**

Principles of reasoned discourse and their application to controversial issues.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: English 110 or 111 or equiv and either communic major or 15 cr hrs of arts and sciences course work. GEC/LAR course.

**311 Rhetoric and Social Influence U 5**

Case studies on selected issues in popular discourse in which the rationale of rhetorical language is explored and exemplified.

Au, Sp Qtrs. 5 or 2 2½-hr cl. Prereq: English 110 or 111 or equiv, and soph standing. BER/GEC/LAR course.

**312 The Communication Process U 4**

A study of communication as a transactional process, with emphasis on an analysis of communication barriers and breakdowns which impede effective communication.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Communic major or 15 cr hrs of social and behavioral sciences course work. Not open to students with credit for 444.

**313† Public Communication in the Age of Television U 5**

The use of the television medium by political, religious, and occasional advocates with emphasis upon the development of critical standards for viewers.

3 cl, 2 hrs arr. Prereq: English 110 or 111 or equiv, and soph standing.

**314† Rhetoric of Black Americans U 4**

Examination of the rhetoric of black Americans in connection with such strategies as assimilation, separation, and revolution, to establish a role or identity in American society.

4 cl. Prereq: English 110 or 111 or equiv and soph stnding. Fulfills in part the ASC LAR advanced English composition requirement. Not open to students with credit for 330. BER/LAC course.

**316 The Rhetoric of American Issues U 5**

A study of selected political, social, and religious issues and the principal American spokespersons and audiences associated with them from 1787 to the present.

Au, Wi, Qtrs. 2 2-hr cl. Prereq: English 110 or 111 or equiv, and soph standing. Not open to students with credit for 397. GEC/LAR course.

**317 Communication and Society: Change and Reconstruction U 4**

An examination of the nature of individuals' communication growth, with an emphasis on the relationship between social cognition and effective communication.

Sp Qtr. 2 2-hr cl. Prereq: Communic major or 15 cr hrs of social and behavioral sciences course work. Not open to students with credit for 325.

**324 Interpersonal Communication U 5**

Analysis of dimensions and relationships in interpersonal communication, especially needs, perceptions, orientations, contexts, and barriers; exercises, demonstrations, and applications to students' own experiences.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Communic major or 15 cr hrs of social and behavioral sciences course work. Not open to students with credit for 315.

**328 Persuasive Communication U 5**

Introduction to methods of audience analysis and the development of written persuasive messages; analysis of persuasion in the media and interpersonal settings.

Au, Wi, Sp Qtrs. 5 cl. H328 (honors) may be available to students enrolled in an honors program or by permission of dept honors committee chairperson. Prereq: Communic major or 15 cr hrs of social and behavioral sciences course work. Not open to students with credit for 225. BER/LAC/LAR course.

**331 Communication and the Task-Oriented Group U 5**

The communication processes necessary for small groups to effectively accomplish tasks.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Communic major or 15 cr hrs of social and behavioral sciences course work. Not open to students with credit for 530.

**332 Communication and Gender in Interpersonal and Organizational Settings U 5**

An examination of the role of communication in creating and holding into place stereotypical sex differences in interpersonal and organizational communication settings.

Au, Wi, Qtrs. 2 2-hr cl. Prereq: Communic major or 15 cr hrs in social and behavioral sciences course work.

**335 Organizational Communication U 5**

Major organizational communication concepts and theories; application of theories to organizational communication practices through the use of case studies.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Communic major or 15 cr hrs of social and behavioral sciences course work. Not open to students with credit for 615.

**340 Introduction to Telecommunication and Electronic Media Technologies and Industries U 5**

Basics of telecommunication and electronic media technologies; evolution and innovation of technologies; markets for new and existing services; U.S. and international dimensions of systems.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Communic major or 15 cr hrs of social and behavioral sciences course work. Not open to students with credit for 215.

**341 Introduction to Telecommunications and Electronic Media Theories and Policies U 5**

Theoretic bases for understanding telecommunication and electronic media, mechanisms for the formulation and implementation of policy; social impact of media systems.

Au, Wi, Sp Qtrs. 4 cl. Prereq: Communic major or 15 cr hrs of social and behavioral sciences course work.

**350 Introduction to Creating Electronic Messages U 5**

Introduction to basic theory and concepts of video and audio production within a context of critical analysis; technical skill development and aesthetic appreciation.

Au, Wi, Sp Qtrs. 3 cl, 3 labs. Not open to students with credit for 210.

**362 Communication, Gender, and Society U 5**

An examination of the role of communication in creating and holding into place societally accepted gender identities.

Sp Qtr. 2 2-hr cl. Prereq: Communic major or 15 cr hrs in social and behavioral sciences course work.

**364 Communication for National Development and Change U 5**

An examination of the role of communication for national development and change, primarily in Third World settings.

Wi Qtr. 2 2-hr cl. Prereq: Communic major or 15 cr hrs in social and behavioral sciences course work.

**366 Communication and Popular Culture U 5**

An examination from the perspective of communication as a form of popular culture and issues related to the communication of popular culture.

Au Qtr. 2 2-hr cl. Prereq: Communic major or 15 cr hrs of social and behavioral sciences course work.

**368 Intercultural Communication in Organizational Contexts U 5**

An examination of the role of intercultural communication in organizational contexts and the attendant effects on the creation and transmission of cultural consciousness, knowledge, tradition, and practices.

Au Qtr. 2 2-hr cl. Prereq: Communic major or 15 cr hrs in social and behavioral sciences course work.

**440 Research Methods for Telecommunication and Electronic Media U 5**

Overview of quantitative and qualitative research methods and applications for studying issues of telecommunication and electronic media, diffusion of new telecommunication technologies, and current research practices.

Au, Sp Qtrs. 4 cl. Prereq: 340 or 341. Not open to students with credit

**450 Production Processes in Telecommunication U 5**

Intermediate study of the planning, production, and directing processes of creating video and audio messages; and emphasis on the producer's/director's/editor's functions in organizing and executing mediated messages.

Au, Wi, Sp Qtrs. 3 cl, 4 labs. Prereq: 350. Not open to students with credit for 411.

**460† Theories of Communication in Culture and Society U 5**

An examination of communication studies guided by such contemporary theories as psychoanalysis, semiotics, phenomenology, Marxism, and feminism.

2 2-hr cl. Prereq: 260 and one of 332, 362, 364, 366, or 368; and jr or sr standing. GEC/LAR course.

**494 Group Studies U 1-5**

Repeatable to a maximum of 20 cr hrs.

**505 Presentational Speaking in the Modern Organization U G 4**

The theory and practice of planning, preparing, and transmitting formal position statements in settings of organizational decision-making.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: English 110 or 111 or equiv, and soph standing; or grad standing. A section taught by a faculty member will be offered Sp Qtr for grad students.

**512 Communication, Images, and Action U G 4**

The interplay between interpersonal communication systems and technologies from a current as well as an historical perspective.

Au Qtr. 2 2-hr cl. Prereq: 312 or 317 or grad standing. Not open to students with credit for 555.

**528 Topics in the Structure and Functions of Conversation U G 4**

The functions and organizing principles of communication in various contexts; implications for competent communication; and experience in analyzing talk.

Au Qtr. 2 2-hr cl. Prereq: 324 or 328 or grad standing. GEC/LAR course.

**531† Communication and Conflict Management U G 4**

An overview of the communication and conflict literature with emphasis on effective conflict management.

2 2-hr cl. Prereq: 331 or grad standing.

**536† Interviewing: Communication Concepts and Skills U 4**

Communication theory/practice in interviews; research-guided simulated informational, employment, and persuasive interviews.

2 2-hr cl. Prereq: One of 324, 328, or 335. Not open to students with credit for 618.

**550 Advanced Production Processes in Telecommunication U 5**

Planning, producing, and directing video and audio messages; emphasizes the media producer's function of organizing production elements to meet externally-specified (client-defined) program objectives.

Sp Qtr. 2 cl, 4 lab hrs. Prereq: 450 or 411 and permission of instructor. Not open to students with credit for this topic under 794G.

**Teaching of Speech in Secondary Schools**

See Ed-T&P 556.

**560 Communication in Culture and Society Practicum U G 5**

Study of situation-specific communication issues and processes; research within preselected community groups.

Sp Qtr. 2 2-hr cl. Prereq: 260; and one of 362, 364, 366, or 368; or grad standing.



**565† Communication and Community U G 5**

A critical examination of media as communication linkages for communities; community media studied: public access television, video, local radio, and alternative media.

2-2-hr cl. Prereq: One of 260, 332, 362, 364, 366, or 368; or 15 cr hrs of social and behavioral sciences course work; or grad standing.

**567 Communication Theories and Media Literacy U G 5**

An examination of competing theories of communication and their implications for planning and implementation of media literacy programs.

Wi Qtr. 2-2-hr cl. Prereq: One of 260, 332, 363, 364, 366, or 368; 15 cr hrs of social and behavioral sciences course work; or grad standing. Not open to students with credit for this topic under 794F.

**569 Communication, Power, and Knowledge U G 5**

An analysis of communication breakdowns within the public sphere, focusing on the concept of distorted communication as it constitutes power and knowledge.

Sp Qtr. 2-2-hr cl. Prereq: One of 260, 332, 362, 364, 366, or 368; or 15 cr hrs of social and behavioral sciences course work; or grad standing. Not open to students with credit for 601.

**602 Humanistic Communication Analysis U G 4**

Examination of a variety of humanistic theoretical models and their application to human communication research.

Wi Qtr. Prereq: 312 or 317 or grad standing. Not open to students with credit for 701.04.

**604† Ethics of Communication U G 4**

Lectures, discussions, assimilations, and case studies focus on the nature, roles, and functions of ethics in communication in response to major topics and questions.

4 cl. Prereq: 305 and English 110 or 111 or equiv; or permission of instructor. Not open to students with credit for 680. GEC/LAR course.

**605 Advanced Argumentation U G 4**

Intensive argumentative writing and oral defense; controversial issues and texts provide material for invention and evaluation of ethical, political, legal, medical and other practical arguments.

Wi Qtr. 2-2-hr cl. Prereq: 305 or grad standing. GEC/LAR course.

**609 Contemporary Perspectives on Rhetoric U G 5**

Analytical and critical survey of major representative theories of rhetoric, with an emphasis on modern and contemporary perspectives.

Wi Qtr. 3 1/2-hr cl. Prereq: 213 or grad standing or permission of instructor.

**610 Legal Reasoning U G 4**

A study of rhetorical strategies used for deliberation, justification, and persuasion in a variety of legal contexts.

Wi Qtr. 2-2-hr cl. Prereq: 305 and English 110 or 111, or grad standing, or permission of instructor. GEC/LAR course.

**614 Issues and Images in Political Communication U G 5**

Analysis of the roles played by the mass media, public leaders, and accidental circumstances in the development of issues and images in contemporary American political communication.

Au Qtr. 2-2-hr cl. Prereq: One of 311, 313, 314; or grad standing. Not open to students with credit for 622.

**617† Rhetoric of Social Intervention U G 5**

Selected historical case studies describing communication strategies for intentional change in business, religious, and political institutions.

2-2-hr cl. Prereq: One of 302 or grad standing. GEC/LAR course.

**624 Communication in Personal Relationships U G 4**

Advanced level survey of theory and research concerning the role of communication in the development, maintenance, and decay of interpersonal relationships.

Au, Wi, Sp Qtrs. 2-2-hr cl. Prereq: 324, or grad standing. Not open to students with credit for 612.

**625† Nonverbal Communication U G 5**

Study of research and theory on the role of nonverbal behavior in interpersonal communication contexts.

2-2-hr cl. Prereq: One of 324, 328, 331, or 335; or grad standing.

**628 Contemporary Persuasion Theory U G 4**

Persuasive campaigns in mass audience settings; persuasion in interpersonal contexts, including organizations, family, and personal relationships.

Au, Wi Qtrs. 2-2-hr cl. Prereq: 324 or 328 or grad standing. Not open to students with credit for 803.

**631 Communication in Decision Making U G 4**

Decision-making as a process; comparisons between interpersonal, bargaining-negotiation contexts, and groups and organizations; descriptive and prescriptive models of decision-making in small groups and organizations.

Sp Qtr. 4 cl. Prereq: 331 or grad standing. Not open to students with credit for 616.

**635 Organizational Communication: Microperspectives U G 4**

Major organizational communication concepts and theories at individual, dyadic, and group levels of analysis; focus on intraorganizational communication processes.

Sp Qtr. 1-3-hr cl. Prereq: 335 or grad standing.

**641† Public Broadcasting U G 5**

History, theory, and criticism of public broadcasting; current trends and issues in programming, funding, audiences, and goals.

4 cl. Prereq: 340 and 341, or grad standing. Not open to students with credit for 821D.

**652 Telecommunication and Electronic Media Policy U G 5**

Survey of telecommunication policy issues; role of the public and industries; FCC, congress, and courts; emphasis on policy issues in broadcasting, cable, satellites, and telephone.

Au, Sp Qtrs. Prereq: 340 and 341, or grad standing. Not open to students with credit for 715.

**653 International Telecommunication and Electronic Media U G 5**

Socioeconomic and geopolitical contexts of national communication systems; management of communication interfaces and common resources; international organizations, legal regimes, and policy.

Wi Qtr. 4 cl. Prereq: 340 and 341; or int stds major; or grad standing. Not open to students with credit for 794.

**654 Social Implications of Telecommunication and Electronic Media Structures U 5**

Advanced study of a current topic in telecommunication and electronic media industry structures.

Sp Qtr. 4 cl. Prereq: 652 or 653 or 715.

**657 New Communication Technologies U G 5**

Storage, transmission, and display systems of mediated communication; optical disc, common carriers, telecommunication- computer linkages, and high-definition TV; information industries and society.

Au, Wi, Qtrs. 4 cl. Prereq: 340 and 341; or grad standing. Not open to students with credit for 716.

**658 Telecommunication and Electronic Media Services and Programming U G 5**

An examination of the decision-making processes in electronic media organizations employing simulation techniques to illustrate decision-making under uncertainty.

Wi Qtr. 4 cl. Prereq: 340 and 341, or grad standing. Not open to students with credit for 526.

**659 Communication Systems and Society U 5**

Advanced study of a current topic in the relationship between telecommunication and electronic media systems and society.

Wi, Sp Qtrs. 4 cl. Prereq: 657 or 658.

**660 Interpretive Communication Analytics U G 5**

A practical introduction to interpretive analytics as used in the study of communication; critical ethnography, participant observation, sense-making, oral history, and popular memory.

Wi Qtr. 2-2-hr cl. Prereq: 460 or grad standing.

**662 Contemporary Perspectives on Communication and Gender U G 5**

Examination of contemporary communication theory, method, and practice relevant to women's communication.

Au Qtr. 2-2-hr cl. Prereq: 460 or grad standing.

**664† Contemporary Perspectives on Communication and the Third World U G 5**

An examination of recent communication theories and their implications for the role of communication in social change, particularly in Third World settings.

Au Qtr. 2-2-hr cl. Prereq: 460 or int stds major or grad standing. Not open to students with credit for this topic under 794D or 821L.

**666 Contemporary Perspectives on Communication and Popular Culture U G 5**

Studies of cultural forms and popular communication using advanced communication theories based on semiology, psychoanalysis, phenomenology, Marxist cultural theory, and feminist theory.

Wi Qtr. 2-2-hr cl. Prereq: 460 or grad standing.

**668 Contemporary Perspectives on Intercultural Communication in Organizational Contexts U G 5**

An examination on insights provided by recent communication theories about the challenges and difficulties in organizational communication resulting when people of different cultures interact.

Sp Qtr. 2 2-hr cl. Prereq: 260; and 362 or 364 or 366 or 368; or grad standing. Not open to students with credit for 600.

**693 Individual Studies U G 1-5**

Conference, library, and laboratory work.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698† Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****730† Communication Dynamics in the Small Group U G 5**

A communicative-based self-analytic study group which utilized SYMLOG to analyze the communication dynamics within the small group.

3 2-hr cl. Prereq: Communic major and 330 and 531; or grad standing; or permission of instructor.

**780 Communication Research Methods U G 5**

Predominant research methodologies in the field of communication.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs including cr hrs earned in 701 decimal subdivisions; subdivisions not repeatable.

**780.01 Advanced Interpretive Communication Analytics****780.02 Rhetorical Analysis and Criticism****780.03 Telecommunication and Electronic Media Survey Research Methods****780.04 Telecommunication and Electronic Media Policy Research Methods****H783 Honors Research U 3-15**

A program of independent study for the student with special aptitudes; individual conferences and reports.

Prereq: 4th yr standing with a grade of A in at least half of the communic courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**790 Research Practicum in Communication U G 5**

Survey of research methods and "hands on" experience in conducting a research project.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 25 cr hrs.

A— Critical/Cultural Practicum.

B— Interpersonal/Organizational Practicum.

C— Rhetoric Practicum.

D— Telecommunication and Electronic Media Practicum.

**794 Group Studies U G 3**

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**797† Interdepartmental Seminars U P G 3**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs and by permission.

**800 Introduction to Research and Teaching in Communication G 5**

Introduction to graduate study and research in communication and the teaching of communication; emphasis on both the resources available for research and the skills and problems in teaching communication.

Au Qtr. Prereq: Grad standing in communic or permission of instructor. Required of all master's-level students; open to PhD students wishing to supplement their background in communic research and methodology.

**801 Professional Development in Academia G 5**

Designed to give graduate students in communication the knowledge and skills necessary to be successful in academic careers.

Au Qtr. 1 4-hr cl. Prereq: Grad standing in communic and at least 20 grad cr hrs in communic.

**810 Theories of Rhetoric G 5**

Reading and detailed study of the theories of principal rhetoricians from ancient to modern times.

Wi Qtr. 5 cl. Prereq: Grad standing. Not open to students with credit for 619.

**811 Seminars in History and Criticism of Public Address G 5**

Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

A— Rhetoric of Social Movements.

B— American Culture and Public Communication.

C— Communication Ethics.

D— Implicate Order of Change.

E— Political Communication.

F— China and the West.

**816 Seminars in Rhetorical Theory G 5**

Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

A— Classical Rhetorical Theory.

B— Medieval and Renaissance Rhetorical Theory.

C— Modern and Contemporary Rhetorical Theory.

D— Theories of Argument.

E— Major Issues in Rhetorical and Communication Theory.

F— Rhetoric and Rationality.

G— Rhetoric, Fantasy, and Theories of Play.

H— Negotiation of Meaning.

I— Chinese Rhetorical Theory and Practice.

**820 Foundations of Interpersonal and Organizational Communication G 5**

Survey of historical and current trends in theory and research methodology; examination of various approaches to communication research with exemplars.

Sp Qtr. Prereq: Grad standing.

**830 Advanced Study in Interpersonal/Organizational Communication G 5**

Prereq: 820 or permission of instructor. Repeatable to a maximum of 40 cr hrs including cr hrs earned in 826; individual topics not repeatable.

A— Survey of Interpersonal Communication.

B— Survey of Small Group Communication.

C— Survey of Organizational Communication: Micro-Issues.

D— Survey of Organizational Communication: Macro-Issues.

**840 Foundations of Telecommunication and Electronic Media G 5**

Graduate core course in research and theory in telecommunication and electronic media.

Au Qtr. Prereq: Grad standing.

**850 Advanced Study in Telecommunication and Electronic Media G 5**

Prereq: 840. Repeatable to a maximum of 40 cr hrs including cr hrs earned in 806; individual topics not repeatable.

A— Theories of Telecommunication and Electronic Media.

B— Telecommunication and Electronic Media Policy.

C— New Communication Technologies.

D— International Telecommunication and Electronic Media.

E— Telecommunication and Electronic Media Organizations and Industries.

**860 Foundations of Critical/Cultural Studies in Communication G 5**

A comprehensive introduction to critical/cultural studies of communication.

Wi Qtr. Prereq: Grad standing.

**870 Advanced Study in Critical/Cultural Studies in Communication G 5**

Selected topics in communication as addressed by critical/cultural studies approaches.

Prereq: 860 or permission of instructor. Repeatable to a maximum of 40 cr hrs; individual topics not repeatable.

A— Cultural Studies in Communication.

B— Contemporary Marxist Communication Theories.

C— Phenomenological Theories of Communication.

D— Feminist Scholarship in Communication.

E— Seniotics and Communication.

**893 Individual Studies in Communication G 1-5**

Graduate students may register for individual study in areas not normally covered by courses, or to supplement credits in existing 800-level courses.

Arr. Prereq: Grad standing in communic, permission of instructor, and completion of permission to enroll form. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**894† Group Studies G 3**

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**899† Interdepartmental Seminar G 3**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

**927† Theory Construction in Communication G 5**

The formal principles of theory and model construction function as criteria for examining the strengths and weaknesses of four classes of interpersonal communication models.

Prereq: Grad standing or permission of instructor. Not open to students with credit for 802.

**930 Seminars in Interpersonal/Organizational Communication G 5**

Prereq: Appropriate 830 course or permission of instructor. Repeatable to a maximum of 40 cr hrs; individual topics not repeatable.

- A— Family Communication (prereq: 830A).
- B— Topics in Interpersonal Communication Competence (prereq: 830A).
- C— Social Cognition and Communication (prereq: 830A).
- D— Language and Conversation (prereq: 830A).
- E— Conflict, Negotiation, and Bargaining (prereq: 830A B, or C).
- F— Communication Issues in Organizational Assimilation (prereq: 830C).
- G— Communication Structure and Network Analysis (prereq: 830D).
- H— Communication and Change in the Organization (prereq: 830C or D).
- I— Communication and Organizational Culture (prereq: 830C or D).
- J— Organizational Communication and Authority (prereq: 830C or D).
- K— Communication Between Adults and Children (prereq: 830A).
- L— Communication in Small Groups (prereq: 830B).

**950 Seminars in Telecommunication and Electronic Media G 5**

Prereq: Corresponding topic in 850 or permission of instructor. Repeatable to a maximum of 40 cr hrs including cr hrs earned in 821; individual topics are not repeatable.

- A— Theories of Telecommunication and Electronic Media.
- B— Telecommunication and Electronic Media Policy.
- C— New Communication Technologies.
- D— International Telecommunication and Electronic Media.
- E— Telecommunication and Electronic Media Organizations and Industries.

**970 Seminars in Critical/Cultural Studies in Communication G 5**

Seminars in selected topics in critical/cultural studies in communication.

Prereq: Grad standing. Repeatable to a maximum of 40 cr hrs; individual topics repeatable with permission of instructor.

- A— Popular Culture and Communication.
- B— Cross-Cultural Communication.
- C— Third World Communication.
- D— Gender and Communication.
- E— Communication and Community.
- F— Health Communication.

**998 Research in Communication: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Communication: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Comparative Studies in the Humanities

308 Dulles Hall, 230 West 17th Avenue, 292-2559

See also Religious Studies.

**100 Introduction to the Humanities: Western Tradition U 5**

Humanistic achievements of western culture in arts and letters; concepts of human nature and the world as expressed through major works in the humanities; weekly film.

5 cl. Open only to freshmen and sophomores (Rank 1 and 2 students). BER/LAC course.

**101 Social and Political Themes in Literature U 5**

Social and political issues as these are represented in literary and/or cinematic texts from diverse cultures and historical periods.

H101 (honors) may be available to students enrolled in an honors program or by permission of chairperson. Prereq: English 110 or 111 or equiv. 101, 102, 103, and 104 may be taken independently. Fulfills in part the ASC LAR advanced English composition requirement. BER/GEC/LAR course.

**102 Religious Studies U 5**

Prereq: English 110 or 111 or equiv. 101, 102, 103, and 104 may be taken independently. BER/GEC/LAR courses.

**102.01 Religious Themes in Literature**

The search for spiritual meaning and transcendent knowledge in literatures of diverse cultures and cultural periods.

H102.01 may be available to students enrolled in an honors program or by permission of chairperson. Not open to students with credit for 102. Fulfills in part the ASC LAR advanced English composition requirement.

**102.02 Comparative Sacred Texts**

Introduction to religious views of the universe, the supernatural, the human condition, ethics, social organization, etc., through primary sacred texts (oral and written).

**103 Psychological Themes in Literature U 5**

Analysis of the depiction of psychological states, concepts, and processes in western and non-western works of literature and film.

H103 may be available to students enrolled in an honors program or by permission of chairperson. Prereq: English 110 or 111 or equiv. 101, 102, 103, and 104 may be taken independently. Fulfills in part the ASC LAR advanced English composition requirement. BER/GEC/LAR course.

**104 Scientific and Technological Themes in Literature U 5**

Analysis of scientific issues and the representation of science and technology in literary and/or cinematic texts from diverse cultures and historical periods.

H104 may be available to students in an honors program or by permission of chairperson. Prereq: English 110 or 111 or equiv. 101, 102, 103, and 104 may be taken independently. BER/GEC/LAR course.

**208 Utopia and Anti-Utopia U 5**

Utopia and critiques of utopian thinking: the conflict between utopian planning and individual freedom in works by such authors as Plato, More, Huxley, and Skinner.

5 cl. H208 (honors) may be available to students enrolled in an honors program. Prereq: 5 cr hrs in literature and English 110 or 111 or equiv. Not open to students with credit for 213. BER/LAC course. Fulfills in part the ASC LAR advanced English composition requirement.

**234 The American Character U 5**

Basic, interdisciplinary methods in American studies; toward a definition of the concept of a national character.

5 cl. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. BER/LAC course.

**239 City and Country in America U 5**

Interdisciplinary perspectives on the development, accuracy, and influence of popular images and stereotypes of city and country.

5 cl. Prereq: Soph standing and English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. BER/LAC course.

**H240 The Nature of Modernity: Key Ideas and Enduring Problems U 5**

Examination of some of the defining ideas of modern thought and how those ideas have problematically affected modern life in both developed and developing countries.

5 cl.

**270 Introduction to Comparative Religion U 5**

Introduction to the academic study of religion through comparison among major traditions (Judaism, Christianity, Islam, Hinduism, Buddhism, etc.) and smaller communities.

H270 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for Rel Stds 270. Cross-listed in Religious Studies. BER/GEC/LAR course.

**293 Individual Studies U 2-5**

Designed to give students an opportunity for personal study with a member of the faculty.

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**294 Group Studies U 1-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

H294 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**298 Study Tour U 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**298.01 Domestic****298.02 Foreign****301 Love in World Literature U 5**

Representations of love in world literature; emphasis on mythological, psychological, and ideological aspects of selected representations in different cultures and time periods.

H301 (honors) may be available to students in an honors program. Prereq: 5 cr hrs in literature and English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. BER/GEC/LAR course.

**305 Medicine and the Humanities U 5**

Humanistic, scientific, and clinical perspectives on medical issues; literary uses of medical themes; medicine as art and science.

Prereq: Soph standing and English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. BER/LAC course.

**306 The Quest in World Literature U 5**

Motif of the quest in world literature; physical and mental journeys as metaphors of personal transformation and salvation.

5 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for 205. BER/GEC/LAR course.

**308 Representations of the Experience of War U 5**

Representations of war in works of literature, religious texts, and film from diverse cultures and time periods.

Prereq: English 110 or 111 or equiv. BER/GEC/LAR course.

**314 Women in East Asian and Asian-American Literature U 5**

Critical analysis of East Asian and Asian-American women's experience, examining the gender and sexual differences in the distribution of political power and discourse.

Prereq: English 110 or 111 or equiv. BER/GEC/LAR course.

**315 Women and Religion U 5**

Modern women writers' search for feminist alternatives to traditional and patriarchal religious beliefs.

Prereq: 5 cr hrs in literature or wom stds, and English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**317 Women and Film U 5**

Representations of women as sex objects, starlets, social activists, and militant feminists in film; cinematic techniques and devices in films about or by women.

2-2-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for Wom Stds 317. Cross-listed in Women's Studies. BER/GEC/LAR course.

**358 Film and Literature as Narrative Art U 5**

Relationships between film and literature; emergence of cinematic art as a form of representation with emphasis on diverse cultural traditions.

2-2-hr cl, and 1 1-hr cl. Prereq: 5 cr hrs in literature or comp std. BER/GEC/LAR course.

**367 Second Writing Course U 5**

GEC/LAR courses.

**367.01 American Identity in the World**

American culture viewed from inside and from the perspective of foreign cultures, as seen in literature, film, art, music, journalism, folklore, and popular culture.

Prereq: English 110 or 111 or equiv, and soph standing. Not open to students with credit for 230.

**367.02 Values, Science, and Technology in American Culture: An Introduction**

Role of science and technology in contemporary American society; their relationship to human values; sources of concern about their impact; evaluation of selected issues.

H367.02 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: English 110 or 111 or equiv; Math Placement level R or above, or completion of or concur enrollment in GEC science sequence; and soph standing. Not open to students with credit for 250.

**498 Study Tour U 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**498.01 Domestic****498.02 Foreign****500 Conceptual Approaches to International Studies U 5**

Exploration of classic and contemporary conceptual approaches to international studies used by anthropologists, economists, geographers, historians, political scientists, and psychologists.

2-2-hr cl. Prereq: 15 cr hrs of course work in one or more relevant disciplines and permission of instructor. Not open to students with credit for Int Stds 500. Cross-listed in International Studies.

**504 The Arthurian Legends U 5**

The medieval tales of King Arthur's court and the Knights of the Round Table in history, myth, literature, art, and music.

Prereq: 10 cr hrs in literature. Not open to students with credit for 510.

**541 Myth and Ritual U G 5**

Ritual, myth, and literature: structural and thematic relationships.

Prereq: 10 cr hrs in literature or grad standing. Not open to students with credit for 501 or 541.01 or 541.02.

**597 Values, Science, and Technology in Global Perspective U 5**

Examination of how values, science, and technology interact in transforming the world in which we live as well as our understanding of that world.

5 cl. Prereq: Sr standing and completion of GEC second writing course, quantitative and logical skills requirement, and natural science sequence; or permission of instructor; 250 or 367.02 recommended. GEC/LAR course.

**651 Topics in Comparative Studies U G 5**

Critical study of selected themes and topics in a comparative and cross-cultural perspective; emphasis on issues of method, critical theory, representation, power, knowledge, and authority.

2-2-hr cl. Prereq: One course in comp std or rel stds; or grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**660 Modernism: Its Origins and Development in 20th-Century Culture and Politics U G 5**

Origins and development of the modernist sensibility in 20th-century art, literature, social theory, and politics.

5 cl. Prereq: Jr standing or permission of instructor. Not open to students with credit for this topic under 694.

**677 Studies in World Folklore U G 5**

2-2-hr cl. Prereq: English 270 or grad standing. Each decimal subdivision is repeatable to a maximum of 10 cr hrs, including cr hrs earned in 577.

**677.01 Genres of Folk Literature**

Historical and cross-cultural study of genre theory; comparative study of specific genres of folk literature, e.g., fairy tales, folk tales, legends, epics, and jokes.

**677.02 Themes in World Folklore**

Cross-cultural, cross-genre study of folklore themes; e.g., folklore of sex, folklore of religion; multidisciplinary perspective employs anthropological, psychological, and literary theory.

**677.03 Folk Custom, Art, and Material Culture**

Study of folk customs, arts, and material culture; theoretical emphasis on structural affinities of these with other folk forms, including verbal art, ritual, festival, folk religion.

**677.04 Comparative Folk Groups**

Comparative study of ethnic, regional, religious, kin, occupational, age or sex groups; emphasis on range of historical and contemporary theoretical perspectives used to understand groups.

**693 Individual Studies U G 1-10**

Designed to give able students an opportunity to pursue special studies not otherwise offered.

Prereq: Jr standing and permission of chairperson. Not open to freshmen or sophomores. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 3-5**

Special topics.

Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign**

**H783 Honors Research U 5-10**

Senior honors course leading to graduation *with distinction*; independent study for the student with special aptitude.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the comp stds courses taken and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 10 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**790 Foundations of Contemporary Critical Theory U G 5**

Interdisciplinary survey of the theoretical bases of major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.

2 2-hr or 5 cl. Prereq: Jr or sr or grad standing. Cross-listed in English, French, German, Italian, and Spanish.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Arr. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

**890 Interdepartmental Studies in Critical Theory G 5**

Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.

2 2-hr or 5 cl. Background in critical theory recommended. Repeatable to a maximum of 10 cr hrs. Cross-listed in English, French, German, Spanish, and Women's Studies.

## Computer and Information Science

228 Harold A. Bolz Hall, 2036 Neil Avenue Mall, 292-5813

**100 Introduction to Computing Technology U 3**

A course of general interest giving experience with personal computer software, e.g., word processors and spreadsheets; provides fundamental computer literacy; neither teaches nor requires computer programming.

Su, Au, Wi, Sp Qtrs. 3 cl. Students intending to major or minor in computer science should take 221 or 211. Not open to students with credit for 101.

**101 Computer-Assisted Problem Solving U 4**

Problem solving techniques using productivity software; spreadsheets, formulas, conditional logic; relational databases, relational algebra; word processing; data presentation; graphics.

Su, Au, Wi, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: Mathematics placement level R or higher; or Math 075 or higher. Not open to students with credit for 100. GEC/LAR course.

**201 Elementary Computer Programming U 4**

Introduction to programming; lab experience with computers; emphasis on social science applications. PASCAL is taught.

Su, Au, Wi, Sp Qtrs. 3 cl, 3 hrs lab. Not open to students with credit for 211, 221, En Graph 167, or 200. Not recommended for students who plan to continue in cptr/inf courses.

**211 Computer Programming for Problem Solving U 5**

Introduction to the use of computers for problem solving; programming and spreadsheet assignments emphasize management-oriented problems. PASCAL and a spreadsheet program are taught.

Su, Au, Wi, Sp Qtrs. 4 cl, 3 hrs lab. Prereq: Math 116 or 130 or 148. Not open to students with credit for 201, 221, En Graph 167, or 200.

E— Designates an enriched version intended for BUS information systems majors. Prereq: Math 116, 130, or 148.

**212 Computer Data Processing U 4**

Business data processing principles and programming; topics include external sorting techniques, characteristics of direct access storage devices, concepts of multiple program systems. Cobol is taught.

Au, Wi Qtrs. 4 cl. Prereq: 201, 211, 221, En Graph 167 or equiv. Not open to students with credit for 314. A terminal course; 214 is recommended for students planning to continue in information systems.

**214 Data Structures for Information Systems U 4**

Subroutines and modular programming; searching; basic data structures; recursion; introduction to sequential files.

Su, Au, Wi, Sp Qtrs. 3 cl, 3 hrs lab. Prereq: 211.

**221 Programming and Algorithms: Introduction U 4**

Introduction to algorithms, programming, and problem solving; emphasis on top-down design, structured programming, and pseudocoding; Modula-2 is taught.

Su, Au, Wi, Sp Qtrs. (H221: Wi Qtr.) 3 cl, 3 hrs lab. H221 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Math 151 (H221: Math H161 or H190, or permission of instructor). This course is intended primarily for students in ENG or MPS.

**222 Programming and Algorithms: Elementary Data Structures U**

Basic data structures; design, implementation, and use of abstract data types; recursion; introduction to algorithm analysis.

**222.01 Programming and Algorithms: Elementary Data Structures U 4**

Su, Au, Wi, Sp Qtrs. (H222.01: Sp Qtr.) H222.01 (honors) may be available to students enrolled in an honors program or by permission of dept. 3 cl, 1 lab. Prereq: 221 (H222.01; H221). Not open to students with credit for 222.02. Assumes a knowledge of Modula-2.

**222.02 Programming and Algorithms: Elementary Data Structures U 5**

Su, Au, Wi, Sp Qtrs. 4 cl, 1 3-hr lab. Prereq: 201, 211, En Graph 167, or 200, or equiv. Not open to students with credit for 222.01. Modula-2 is taught.

**294 Group Studies U 1-5**

This course is designed to give the student an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**Enrollment Priority**

*Enrollment priority in courses numbered higher than 294 will be given to computer and information science majors and to students who meet the minimum cumulative pt-hr ratio requirement for becoming computer and information science majors.*

**314 Business Programming with File Processing U 4**

Business data processing principles and programming: sequential file processing algorithms, sorting, data validation. COBOL is taught.

Su, Au, Wi, Sp Qtrs. 3 cl, 3 hrs. lab. Prereq: 214 and a minimum CPHR of 2.0.

**321 Programming and Algorithms: Formalization of Programming U 4**

Introduction to computer systems, program specification, and formal descriptions of data and data abstractions including sequential files, algorithms analysis, and sorting algorithms.

Su, Au, Wi, Sp Qtrs. 3 cl, 3 lab hrs. Prereq: 222 and a minimum CPHR of 2.00. Prereq or concur: Math 366.

**360 Introduction to Computer Systems U 4**

Introduction to computer architecture at the machine language and assembler language level; assembler language programming and lab.

Su, Au, Wi, Sp Qtrs. 3 cl, 1 lab. Prereq: 212 or 214 or 222.01 or 222.02, and a minimum CPHR of 2.00.

**459 Programming Languages for Programmers U 1**

Elementary language constructs of various programming languages for students who are well versed in programming.

1 3-hr lab. Repeatable to a maximum of 2 cr hrs. This course is intended for experienced programmers who wish to learn an additional language. This course is graded S/U.

**459.01 Programming in FORTRAN**

Wi Qtr. Prereq: 313 or 314 or 321.

**459.11† Programming in PL/1**

Prereq: 313 or 314 or 321.

**459.21 Programming in C**

Au, Wi, Sp, Su Qtrs. Prereq: 313 or 314 or 321.

**459.31 Programming in LISP**

Sp Qtr. Prereq: 313 or 314 or 321.

**459.41 Programming in COBOL**

Au Qtr. Prereq: 321. Not open to students with credit for 212 or 313 or 314.

**489 Professional Practice in Industry U 2**

Preparation and submission of a comprehensive report based on actual employment experience in a co-op job in industry.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to co-op program in cptr/inf. Repeatable to a maximum of 8 cr hrs. Cr hrs to be used as free electives only. This course is graded S/U.

**493 Individual Studies U 1-5**

Planning, conducting, and reporting a special study appropriate to the needs of the student.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**516 Information System Analysis and Design U G 4**

Introduction to information systems development; tools of structured analysis; data flow diagrams, data dictionary, process descriptions; students develop user specifications in a term project.

Su, Au, Wi, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq: 570.

**541 Elementary Numerical Methods U G 3**

Survey of basic numerical methods; number systems and errors of finite representation, solution of a single non-linear equation, interpolation, numerical integration, and solution of linear systems.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 201 or 211 or 221 or En Graph 167 or 200, and Math 153.

**548† Computer Science for High School Teachers U G 5**

Introduction to computer history, organization, hardware, and software; laboratory experience using batch processing and time-sharing; applications of computers with emphasis on uses in education and business.

Sp Qtr. 4 cl. Prereq: Permission of instructor. Open only to high school teachers. Primarily intended for science, math, or business teachers.

**560 Elements of Computer Systems Programming U G 4**

Software engineering as exemplified by various classical computer systems programs; assemblers, macroprocessors, loaders; group participation in a major software project involving the implementation of various systems programs.

Su, Au, Wi, Sp Qtrs. 3 cl, 3 hrs lab. Prereq: 313 or 321 and 360 or Elec Eng 460.

**570 File Design and Analysis U G 3**

Random file processing; file organization and access methods; time and space considerations. Introduction to relational database systems

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 313 or 314 or 321, and Math 366.

**612 Introduction to Cognitive Science U G 3**

Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.

Wi Qtr. 2 1 1/2-hr cl. Prereq: Permission of instructor and a total of 12 crs hrs from at least two of the following areas: computer science, linguistics, philosophy, and psychology. Not open to students with credit for Linguist 612, Philos 612, Psych 612, 794 (Sp 89) or 794A (Wi 90). Cross-listed in Linguistics, Philosophy, and Psychology.

**615† Arithmetic Algorithms U G 3**

Design, implementation, analysis, and application of computer algorithms for performing the arithmetic operations used in computer algebra systems; integer arithmetic, rational number arithmetic, and modular arithmetic.

Sp Qtr. 3 cl. Prereq: 680 or equiv and either Math 568 or 573 or equiv; or permission of instructor.

**625 Introduction to Automata and Formal Languages U G 3**

Machine based and formal grammar based models of computation: finite automata; regular languages, context free languages, pushdown automata, and Turing machines; Church-Turing thesis; introduction to the halting problem.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 321 and Math 366.

**630 Survey of Artificial Intelligence I: Basic Techniques U G 3**

A survey of the basic concepts and techniques, problem solving, and knowledge representation, including an introduction to expert systems.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 222 and Math 366 and sr/grad standing.

**640 Numerical Analysis U G 3**

Analysis of numerical methods for ordinary differential equations, boundary value, and characteristic value problems, splines, non-linear equations, approximation of functions; standard mathematical software libraries.

Wi Qtrs. 3 cl. Prereq: 221 or equiv; Math 255 or 256 or 415; and 541 or grad standing.

**642 Numerical Linear Algebra U G 3**

Iterative methods for the solution of linear systems, computation of eigenvalues and eigenvectors, linear programming-simplex method, use of standard mathematical software libraries.

Au Qtr. 3 cl. Prereq: 541; Math 568 or 571.

**650 Information Storage and Retrieval U G 3**

Fundamental concepts of information storage and retrieval with emphasis on problems associated with textual databases; data representation and manipulation; content analysis and description; query languages and heuristics.

Au Qtr. 3 cl. Prereq: 570; and Stat 427 or equiv. Not open to students with credit for 750.

**655 Introduction to the Principles of Programming Languages U G 4**

Programming language concepts such as grammars and parse trees; interpretation versus compilation, binding, and scope rules; and language constructs for control and data abstraction.

Au, Wi, Sp Qtrs. 3 cl, 3 lab hrs. Prereq: 560 and 625.

**660 Introduction to Operating Systems U G 3**

Operating system concepts: memory management, process management, and file management; sample operating systems.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 560, 570, 675, and Stat 427 or equiv.

**662 Operating Systems Laboratory U G 3**

Construction of operating system components: scheduling, context switching, progress management, message passing, memory management, interrupt processing.

Au, Wi Qtrs. 2 cl, 1 3-hr lab. Prereq: 459.21 and 660. Lab assignments are programmed in C. Not open to students with credit for 761.

**670 Introduction to Database Systems U G 3**

Database models; database organization, database design, integrity and security; database systems and their utilization.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 570 or grad standing.

**673 Database and Information Management for Manufacturing U G 3**

File and data management, information flow in manufacturing, handling of geometric data for CAD/CAM/CAE, and communication between different computer systems.

Sp Qtr. Prereq: 221 or permission of instructor. Not open to Cptr/Inf majors. Open to students in Manufacturing Systems and Engineering Program.

**675 Introduction to Computer Architecture U G**

Computer system components, instruction set design, hardwired control units, arithmetic algorithms/circuits, floating-point operations, introduction to memory and I/O interfaces.

**675.01 Introduction to Computer Architecture U G 3**

Au, Wi, Sp Qtrs. 3 cl. Prereq: CIS 360, Math 366, and EE 261. Not open to students with credit for 675.02. Intended for students with previous knowledge of Digital Logic Design.

**675.02 Introduction to Computer Architecture U G 4**

Au, Wi, Sp Qtrs. 4 cl. Prereq: 360, and Math 366. Not open to students with credit for 675.01. Intended for students without previous knowledge of Digital Logic Design

**676 Microcomputer Systems U G 3**

Bus structure; memory, interrupt, and I/O design; case studies on microprocessors and systems with emphasis on selection, evaluation, and applications based on their architectural features.

Wi, Sp Qtrs. 3 cl. Prereq: 675 or equiv.

**677 Computer Networks U G 3**

Concepts and goals of computer networking; structures of computer networks; network control, analysis, design, and management; case studies.

Au, Wi, Sp Qtrs. 3 cl. Lab assignments are programmed in C. Prereq: 459.21 and 675.

**680 Data Structures U G 3**

Data abstraction; introduction to algorithm analysis; data structures and file structures, including lists, trees, and graphs; searching and sorting.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 560 and 570; Stat 427 or equiv; and Math 366; or grad standing.

**681 Introduction to Interactive Graphics U G 3**

Introduction to display hardware, interactive techniques, 2D business graphics and presentation graphics, 2D viewing algorithm including transformations, windows, viewports and clipping, and introduction to 3D perspective graphics.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 560 or permission of instructor; Math 568 or 571.

**693 Individual Studies U G 1-5**

Designed to give the student an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 crs hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Designed to give the student an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 crs hrs.

**715†\* Algebraic Algorithms I U G 3**

Design, implementation, analysis, and application of algorithms for performing algebraic operations; arithmetic operations on polynomials, polynomial greatest common divisors, and resultants; polynomial linear algebra.

Au Qtr. 3 cl. Prereq: 615, Prereq or concur: Math 580, or permission of instructor.

**716†\* Algebraic Algorithms II U G 3**

Continuation of 715: design, implementation, analysis, and application of algorithms for performing algebraic operations; isolation and refinement of polynomial real zeros; polynomial complete factorization.

Wi Qtr. 3 cl. Prereq: 715. Prereq or concur: Math 581, or permission of instructor.

**7171\* Algebraic Algorithms III U G 3**

Continuation of 716: design, implementation, analysis, and application of algorithms for performing algebraic operations; calculation with real algebraic numbers; cylindrical algebraic decomposition; and quantifier elimination.  
Sp Qtr. 3 cl. Prereq: 716; prereq or concur: Math 582, or permission of instructor.

**721 Introduction to Parallel Computing U G 4**

Principles and practice of parallel computing; design, implementation, and evaluation of parallel programs for shared-memory architectures, local-memory architectures, and vector processors.  
Wi Qtr. 3 cl, 3 lab hrs. Prereq: 459.21, 655, 660, 680, and 775.

**725 Computability and Unsolvability U G 3**

Time and space measures; Turing machine variants and RAM's; universal Turing machines; undecidable language problems; development of efficient algorithms.  
Wi, Sp Qtrs. 3 cl. Prereq: 625.

**726† Introduction to Automata and Language Theory U G 3**

Finite state automata, regular expressions, context-free languages, pushdown automata, parsing.  
Wi Qtr. 3 cl. Prereq: 625 or equiv or permission of instructor.

**727\* Computational Complexity U G 3**

Time and space complexity classes and hierarchies; deterministic and nondeterministic log space; polynomial time; polynomial space; complete and provably hard problems; random polynomial time.  
Au Qtr. 3 cl. Prereq: 725 and 780.

**730 Survey of Artificial Intelligence II: Advanced Topics U G 3**

A survey of advanced concepts, techniques, and applications of artificial intelligence, including knowledge-based systems, learning, natural language understanding, and vision.  
Au, Wi Qtrs. 3 cl. Prereq: 630.

**731 Knowledge-Based Systems U G 4**

Theory and practice of expert systems and knowledge-based systems; use of current knowledge-based systems software tools.  
Sp Qtr. 3 cl and 1 3-hr lab. Prereq: 560 and 630, or grad standing.

**732† Computational Linguistics U G 3**

Exploration of the computational processing of natural language; syntactic, semantic, and pragmatic processing techniques are applied to understanding and generating written English.  
Au Qtr. 3 cl. Prereq: 730; Linguist 601 or permission of instructor.

**737 Proseminar in Cognitive Science U G 2**

An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Sp Qtr. 12-hr cl. Prereq: CIS 612, Linguistics 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Industrial Systems Engineering, Linguistics, Philosophy, Psychology, and Speech and Hearing Science.

**739 Knowledge-Based Systems in Engineering U G 3**

Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation.

Sp Qtrs. 2 1½-hr cl. Prereq: Cptr/Inf 630 or permission of instructor. Cross-listed in Chemical, Mechanical, and Nuclear Engineering.

**741 Comparative Operating Systems U G 3**

A careful examination of a number of representative computer operating systems.

Su Qtr. 3 cl. Prereq: 660 or equiv.

**752 Techniques for Simulation of Information Systems U G 3**

Introduction to the methodology and techniques of the design of computer simulation of information systems.

Au Qtr. 3 cl. Prereq: Stat 428 or equiv.

**755 Programming Languages U G 3**

Procedural abstraction, data abstraction, control abstraction (nondeterminism, concurrency, etc.), operational semantics, denotational semantics, specification, and verification of programs.

Wi, Sp Qtrs. 3 cl. Prereq: 655 and Math 366.

**756 Compiler Design and Implementation U G 4**

Syntactic and semantic analysis using formal models, automatic programming, generation of optimal code, synthesis of messages, design of incremental programming environments; students write a simple translator.

Wi Qtr. 3 cl, 1 lab. Prereq: 459.21, 625, 655, and 680. Lab assignments are programmed in C.

**757 Software Engineering U G 3**

Principles of design, implementation, validation, and management of computer software; emphasis on reading and discussing papers from relevant journals and proceedings; term project required.

Au, Wi Qtrs. 3 cl. Prereq: 560 or equiv and sr or grad standing or permission of instructor.

**758 Software Engineering Project U G 4**

Principles and applications of programming team organization, cost estimation, scheduling, requirements analysis, design, documentation, programming-in-the-large, group reviews, testing, and debugging.

Sp Qtr. 3 cl, 3 lab hrs. Prereq: 757.

**760 Operating Systems U G 3**

Advanced operating system concepts: process synchronization, process deadlock, security and access control, distributed operating system principles and prototypes.

Au, Wi Qtrs. 3 cl. Prereq: 660 or equiv.

**762 Advanced Operating System Laboratory U G 3**

Construction of advanced operating system components: Internet, client-server, remote file server, distributed namespace, user interface software.

Sp Qtr. 2 cl, 3 lab hrs. Prereq: 662. Lab assignments are programmed in C.

**763 Introduction to Distributed Computing U G 3**

Concepts and mechanisms in design of distributed systems; process synchronization, global state: reliability; distributed resource management; deadlock, performance evaluation; representative distributed operating systems.

Sp Qtr. 3 cl. Prereq: 760.

**765† Management Information Systems U G 3**

Theory and practice of management information systems from the viewpoint of computer and information science; systems approach to management and organization; significance of information.

Wi Qtr. 3 cl. Prereq: Grad standing in cptr/inf or permission of instructor.

**770 Database Systems U G 3**

Fundamental design considerations, system principles and machine organizations of database systems; performance analysis of design alternatives, system configurations and hardware organizations; impact of applications and technology on database systems.

Wi Qtr. 3 cl. Prereq: 660 and 670.

**775 Computer Architecture U G 3**

Microprogramming, bit-slice logic, reduced instruction set computer architecture, advanced memory organizations, introduction to parallel computer architectures, and performance models/evaluation.

Au, Sp Qtrs. 3 cl. Prereq: 660 and 675.

**778 Computer-Aided Design and Analysis of VLSI Circuits U G 4**

VLSI design methodology; specification of VLSI circuits at various levels of abstraction; design, layout, and computer simulation of circuits; high-level synthesis; design projects.

Au, Wi Qtrs. 3 cl, 1 3-hr lab. Prereq: 560, Elec Eng 561; and 675 or Elec Eng 562.

**779 Introduction to Artificial Neural Network Methods U G 3**

Survey of fundamental methods and techniques of artificial neural networks: single and multi-layer networks; associative memory and statistical networks; supervised and unsupervised learning.

Wi Qtr. 3 cl. Prereq: 630 or Elec Eng 762. Not open to students with credit for Elec Eng 779. Cross-listed in Electrical Engineering.

**780 Analysis of Algorithms U G 3**

Algorithm design paradigms; mathematical analysis of algorithms; NP-completeness.

Au, Wi Qtrs. 3 cl. Prereq: 680 or grad standing and equiv of 680.

**781 Introduction to 3D Image Generation U G 3**

3D viewing algorithm including transformations, perspective and clipping, basics of rendering shaded images of polyhedra including polygon scan-conversion, a survey of display algorithms, simple illumination models, anti-aliasing, and transparency and shadows.

Au, Sp Qtrs. 3 cl. Prereq: 459.21, 675; 681 or permission of instructor; Math 568 or 571. Lab assignments are programmed in C.

**782 Advanced 3D Image Generation U G 3**

Advanced topics in rendering 3D realistic imagery including texture mapping, anti-aliasing and reflectance mapping techniques, ray tracing rendering algorithms, radiosity, color theory, data generation techniques, and issues in frame buffer design.

Wi Qtr. 3 cl. Prereq: 781. Lab assignments are programmed in C.



**783 Geometric Modeling U G 3**

Survey techniques and algorithms used to create, manipulate, represent, and display geometric models in computer graphics.

Sp Qtr. 3 cl. Prereq: 781, 541; or grad standing and permission of instructor. Lab assignments are programmed in C.

**788 Intermediate Studies in Computer and Information Science U G 1-5**

Intermediate work in one of the specialized areas of computer and information science is offered.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs; subdivisions repeatable.

- 788.01 Computational Complexity
- 788.02 Introduction Systems and Database Systems
- 788.03 Symbolic Computation
- 788.04 Artificial Intelligence
- 788.06 Operating Systems and Systems Programming
- 788.07 Programming Languages
- 788.08 Computer Organization
- 788.09 Numerical Analysis
- 788.10 Human-Computer Interaction
- 788.11 Parallel and Distributed Computing
- 788.12 Software Engineering
- 788.14 Computer Graphics

**793 Individual Studies U G 1-5**

Designed to give the individual student an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 12 cr hrs for undergrad and 24 cr hrs for grad students. This course is graded S/U.

**794 Group Studies U G 1-5**

Designed to give students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**797 Interdepartmental Seminar U G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Repeatable by permission.

**875 Advanced Computer Architecture G 3**

Advanced pipelining techniques, vector supercomputers, shared-memory and distributed-memory multiprocessors, massively parallel systems, multithreaded machines.

Sp Qtr. 3 cl. Prereq: 721.

**885 Seminar on Research Topics in Computer and Information Science G 1**

Lectures on current research by faculty members in the department.

Au Qtr. 2 cl. Prereq: 1st yr grad student in cptr/inf. This course is graded S/U.

**886† Introduction to Doctoral Studies G 4**

Educational resources and facilities of Department of Computer and Information Science; computer systems, programming languages, text processing, and communication facilities; active research areas; computer science problem solving skills.

Au Qtr. 3 cl, 3 hrs lab. Prereq: Grad standing in dept.

**888 Advanced Studies in Computer and Information Science G 1-5**

Advanced work in one of the specialized areas of computer and information science.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs; subdivisions repeatable. These courses are graded S/U.

- 888.01 Computational Complexity
- 888.02 Information Systems and Database Systems
- 888.03 Symbolic Computation
- 888.04 Artificial Intelligence
- 888.06 Operating Systems and Systems Programming
- 888.08 Computer Organization
- 888.09 Numerical Analysis
- 888.11 Parallel and Distributed Computing
- 888.12 Software Engineering
- 888.14 Computer Graphics

**889 Advanced Seminar in Computer and Information Science G 2**

Selected topics of particular current interest in both the research and applications of computer and information science are considered.

Wi, Sp Qtrs. 1 2-hr cl. Prereq: 2nd qtr grad standing in cptr/inf or permission of instructor. This course is graded S/U.

**899 Interdepartmental Seminar G 1-5****999 Research G 1-18 Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Criminology and Criminal Justice

See Sociology.

## Czech

232 Cunz Hall, 1841 Millikin Road, 292-6733

**101 Elementary Czech I**

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Au Qtr. 5 cl.

**101.51 Individualized Track U 1-5**

Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**102 Elementary Czech II**

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Wi Qtr. 5 cl. Prereq: 101 or 101.01 or 5 cr hrs. of 101.51 or permission of instructor.

**102.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 101 or 101.01, or 5 cr hrs of 101.51, or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.

**103 Intermediate Czech I****103.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 102 or 102.01, or 5 cr hrs of 102.51, or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor. GEC/LAR course.

**104 Intermediate Czech II****104.51 Individualized Track U 1-5**

Continuation of 103; development of the four skills.

Prereq: 5 cr hrs of 103.51 or permission of instructor. Not open to students with credit for 111 or to native speakers of this language through regular course enrollment or EM credit. Students register for and complete from 1-5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor. GEC/LAR course.

**111† Intensive Intermediate Czech U 10**

Readings, oral and written practice, grammar review.

Sp Qtr. 10 cl. Prereq: 102.01 or 5 cr hrs of 102.51 or equiv. Equiv to the 3rd and 4th courses of the foreign language sequence. GEC/LAR course.

**405† Advanced Czech I****405.51 Individualized Track U 1-5**

Continuation of 104.51; development of the four skills.

Prereq: 5 cr hrs of 104.51 or 111 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 104.51 and 405.51 concurrently with permission of instructor.

**407† Advanced Czech II****407.51 Individualized Track U 1-5**

Prereq: 5 cr hrs of 405.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

**580† Reading Czech I****580.51 Individualized Track U G 1-5**

Development of reading skills based on selections from 20th century writers, mostly contemporary writers, and from the contemporary press. Arr. Prereq: 5 cr hrs of 407.51 or permission of instructor. Students register for and complete one to five cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 407.51 and 580.51 concurrently with permission of instructor.

**581† Reading Czech II****581.51 Individualized Track U G 1-5**

Continuation of 580.51; further development of reading skills. Arr. Prereq: 5 cr hrs of 580.51 or permission of instructor. Students register for and complete one to five cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.

## Dairy Science

116 Plumb Hall, 2027 Coffey Road, 292-6851

Four courses, **202, 310, 420, and 430** are required for the Animal, Dairy, and Poultry Science major and are offered cooperatively by the Departments of Animal Science, Dairy Science, and Poultry Science.

**202 Introductory Animal Science U 5**

Role, current organization, history, and characteristics of the animal industries in the world. Clay and Turner.

Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Not open to students with credit for Animl Sc 100, 200, 202, or Pltry Sc 202. Cross-listed in Animal Science and Poultry Science.

**207 Dairy Cattle Evaluation U 3**

Use of functional type traits in evaluation and selection of dairy cattle. Spike. Sp Qtr. 1 2-hr lab and 1 3-hr lab. Prereq: 201 or 202, or Animl Sc 100 or 200 or 202, or Pltry 202, and soph standing; off campus field exp: 1 2-day field trip to dairy herds in the state plus 3-4 class periods.

**310 Principles of Animal Systems Physiology U 5**

Introductory course that surveys organs/systems within the body and relates the functional physiology of those systems to animal production. Pope.

Wi, Sp Qtrs. 5 1-hr cl. Prereq: 202; Biology 110 or 113; Animl Sc 202 or Pltry Sc 202. Not open to students with credit for Animl Sc 310 or Pltry Sc 310. Cross-listed in Animal Science and Poultry Science.

**313 Milk Secretion U 3**

Introduction to mammary gland anatomy, milk synthesis, and factors affecting mammary health. Hogan.

Sp Qtr. 2 1½-hr cl. Prereq: Biology 101 or 113.

**359 Seminar U 1**

Wi Qtr. 1 cl. Prereq: Sophomore standing. Repeatable to a maximum of 2 cr hrs. Zartman.

**359.01† Current Topics in Dairy Science**

Reading and interpreting current scientific and popular literature in this field.

**359.02† Dairy Science Careers**

Job requirements and occupational opportunities; discussion conducted by outside speakers from agribusiness.

**412 Application of Reproductive Management to Livestock U 4**

A practical introduction to the various tools and techniques available to improve the reproductive performance of livestock. Pope.

Wi Qtr. 4 cl. Prereq: 310, Animl Sc 310, Pltry Sc 310, or permission of instructor. Not open to students with credit for 312 or 612, or Animl Sc 312, 412, or 612. Cross-listed in Animal Science.

**420 Principles of Genetic Improvement U 5**

An introduction to the methods available for bringing about genetic change in farm animals. Davis and Irvin.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 202, or Animl Sc 100 or 200 or 202, or Pltry Sc 202; and Animl Sc 210 or Agr Econ 205 or Agr Educ 387 or Agronomy 210 or Stat 145; and Biology 113. Not open to students with credit for Animl Sc 420 or Pltry Sc 420. Cross-listed in Animal Science and Poultry Science.

**Marketing Dairy Products**

See Agr Econ 426. Offered in cooperation with Agricultural Economics and Rural Sociology.

**430 Principles of Animal Nutrition U 5**

A study of fundamental principles of nutrition in mammals and birds. Firkins and Latshaw.

Au, Wi, Sp Qtrs. 4 cl. 1 2-hr lab. Prereq: Animl Sc 100 or 200 or Animl/Dairy/Pltry Sc 202 or Nat Res 200, and Biology 113. Not open to students with credit for Animl Sc 430 or Pltry Sc 430. Cross-listed in Animal Science and Poultry Science.

**431 Feeds and Feeding U 5**

Evaluation of feedstuffs used and dietary formulations for swine, poultry, sheep, beef, and dairy. Practical feeding programs for each species will be presented. Loerch and Mahan.

Sp Qtr. 4 1-hr cl. 1 1-hr recitation, 1-day field trip. Prereq: 430 or Animl Sc 430 or Pltry Sc 430. Not open to students with credit in Animl Sc 635 or 735 or Pltry Sc 635 or 735. Cross-listed in Animal Science and Poultry Science.

**440 Dairy Herd Management U 5**

Application of scientific principles to practical herd management, analyses of alternatives and decision making. Spike.

Wi Qtr. 3 cl, 2 2-hr lab. Prereq: Animl, Dairy, or Pltry Sc 310, 420, and 430.

**530 Comparative Animal Nutrition U 5**

Advanced principles of animal nutrition. Firkins and Latshaw.

Wi. Qtr. 5 cl. Prereq: 430 or Animl Sc 430 or Pltry Sc 430, second writing course, and jr sr standing. Not open to students with credit for Animl Sc 530 or Pltry Sc 530. Cross-listed in Animal Science and Poultry Science. GEC course.

**593 Individual Studies U 3-5**

Special assignments and elementary research; students elect problems after conference with the instructor in charge.

Su, Au, Wi, Sp Qtrs. H593 (honors) may be available to students enrolled in an honors program or eligible for enrollment. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**610 Physiology of Lactation U G 3**

The physiological, endocrine, nutritional, and environmental factors influencing the synthesis and ejection of milk. Schanbacher.

Au Qtr. 2 1-hr cl. 1 2-hr lab. Prereq: Vet Phys 411 and 20 cr hrs in animl sc, dairy sc, or vertebrate biology. Not open to students with credit for Animl Sc 610. Cross-listed in Animal Science.

**612 Physiology of Reproduction U G 5**

Physiology and endocrinology of the reproductive systems; examination of basic mechanisms governing reproduction in various species. Ottobre and Pate.

Au, Sp Qtrs. 3 cl. 1 hr recitation, 1 2-hr lab. Prereq: 310 or Animl Sci 310 or Pltry Sci 310, and second writing course. Not open to students with credit for Animl Sc 612. Cross-listed in Animal Science. GEC course.

**640 Evaluation and Integration of Research for Dairy Operations U G 5**

Integration of scientific principles to maximize efficiency in dairy farm operations. Spike.

Sp Qtr. 5 cl. Prereq: Animl, Dairy, or Pltry Sc 310, 420, 430; off campus field exp.: 2 1-day field trips to establish dairy operations.

**650 Systemic Approaches to the Management of Animal Production Units U 5**

Review of principles of animal production through the integration of scientific, economic, and societal factors using worldwide examples. Allaire.

Au, Sp Qtrs. 3 2-hr cl. Prereq: Animl, Dairy, or Pltry Sc 202, 420, and 430; Agronomy 210 or Animl Sc 210, or Agr Econ 205, or Agr Educ 387, or Stat 145; and second writing course; or permission of instructor. GEC course.

**694 Group Studies U G 3-5**

Special assignments and advanced research for groups; problems assigned after consultation with the instructor in charge.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**710† Advanced Reproductive Physiology U G 4**

Recent advances in research in mammalian reproduction. Ottobre.

Wi Qtr. 2 2-hr cl. Prereq: 612 and acceptable courses in physiolog, anatomy, and biochem. Not open to students with credit for Animl Sc 710. Cross-listed in Animal Science.

**721 Genetics of Animal Populations I U G 3**

Parameters of static populations, genetic arrays, and equilibria and statistical measures; partitioning the phenotypic variance mutation, migration, selection, and chance. Irvin.

Wi Qtr. 3 cl. Prereq: 420 or Mol Gen 500 and Mol Gen 650 or equiv. Not open to students with credit for Animl Sc or Pltry Sc 721. Cross-listed in Animal Science and Poultry Science.

**722 Genetics of Animal Populations II U G 3**

Selection for polygenic characters, mating systems, and development of breeding plans. Irvin.

Sp Qtr. 3 cl. Prereq: 721 or Animl Sc 721 or Pltry Sc 721 or equiv. Not open to students with credit for Animl Sc or Pltry Sc 722. Cross-listed in Animal Science and Poultry Science.

**731 Ruminant Physiology, Nutrition, and Metabolism G 3**

Study of physiology and nutrient metabolism of ruminants; microbial metabolism and fermentative processes will be discussed.

Wi Qtr. 2 1½-hr cl. Prereq: Animl/Dairy/Pltry Sc 310, 430, and Biochem 511 or permission of instructor. Not open to students with credit for Animl Sc 731. Cross-listed with Animal Science.

**732 Research Techniques in Animal Nutrition G 3**

Practical exposure to the techniques involved in ruminant and nonruminant research. Firkins.

Au Qtr. 2 3-hr labs. Prereq: Animl/Dairy/Pltry Sc 430 and Biochem 511, or permission of instructor. Not open to students with credit for Animl Sc 732. Cross-listed in Animal Science.

**733 Nutrition in the Support of Growth U G 5**

A functional approach to the study of nutrition for support of growth and maintenance in animals and humans. Lilburn.

Wi Qtr. 5 cl. Prereq: Animl/Dairy/Pltry Sc 310, Biochem 511, and Animl/Dairy/Pltry Sc 430 or Hum Nutr 610, or permission of instructor. Not open to students with credit for Animl Sc 733 or Fd Sc&Te 733 or Pltry Sc 733. Cross-listed in Animal Science, Food Science and Technology, and Poultry Science.

**734 Nutrition in the Support of Reproduction U G 3**

A functional approach to the study of nutrition for support of reproduction in animals and humans. Day and Latshaw.

Sp Qtr. 3 cl. Prereq: Animl/Dairy Sc 412 or 612, Animl/Dairy/Pltry Sc 430, and Biochem 511. Not open to students with credit for Animl Sc 734 and Pltry Sc 734. Cross-listed in Animal Science and Poultry Science.

**740 Principles of Toxicology I G 3**

Introduction to the principles of toxicology and the factors that influence the expression of drug and chemical induced toxicological effects on major organ systems.

Au Qtr. 3 cl. Prereq: Biochem 613 or equiv, Physiol 312 or equiv. Not open to students with credit for Pharm 740 or Vet Phys 740. Cross-listed in Pharmacy and Veterinary Physiology and Pharmacology.

**741 Principles of Toxicology II G 5**

Toxicological effects of major classes of chemicals and current issues in toxicology, including air pollution, water quality, and hazardous waste.

Wi Qtr. 5 cl. Prereq: 740 or Pharmacy 740 or Vet Phys 740; Biochem 511 or equiv, Physiol 602 or equiv. Not open to students with credit for Pharm 741 or Vet Phys 741. Cross-listed in Pharmacy and Veterinary Physiology and Pharmacology.

**800 Seminar G 1**

Discussion of current dairy science or related areas. Allaire.

Su, Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 15 cr hrs. This course graded S/U.

**810 Advances in Physiology of Domestic Animals G 3**

Au, Wi, Sp Qtrs. 4-hr cl. Prereq: Written permission of instructor and acceptable courses in physiol, cbn&anat, and biochem. Not open to students with credit for Animl Sc 810 or Pltry Sc 810. Cross-listed in Animal Science and Poultry Science.

**810.01\* Anterior Pituitary Function**

Bacon.

Au Qtr.

**810.02\* Endocrinology of Reproduction**

Pate.

Wi Qtr.

**810.03 Immunology and Immunogenetics**

Hines.

Sp Qtr.

**810.05+ Mammalian Germ Cells**

Pope.

Wi Qtr.

**820 Current Topics in Animal Genetics**

Prereq: Acceptable courses in animal genetics, math, and statistics. Repeatable to a maximum of 12 cr hrs. Not open to students with credit for Animl Sc 820 or Pltry Sc 820. Cross-listed in Animal Science and Poultry Science.

**820.01+ Selection Index Theory G 1-3**

Allaire.

Au Qtr.

**820.02+ Research Methods in Animal Genetics G 1-3**

Wi Qtr. Davis.

**820.04+ Modeling of Breeding Systems G 1-3**

Allaire and Davis.

Sp Qtr.

**820.07 Seminar in Animal Genetics Research G 1**

Review of literature related to genetics improvement of agricultural animal populations. Allaire.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Acceptable courses in animal genetics, math, and statistics. Not open to students with credit for Animl Sc 820 or Pltry Sc 820. Repeatable to a maximum of 12 credit hrs. This course is graded S/U. Cross-listed with Animal Science and Poultry Science.

**830 Advanced Studies in Nutrition G 3**

Au, Wi, Sp Qtrs. 3 or 4 cl. Prereq: 631 or Animl Sc 630 or Pltry Sc 630 or Humn Ntr 610; Fd Sc&Te 761 and 762; and 10 grad cr hrs in physiol. Not open to students with credit for Animl Sc 830, Humn Nutr 830, or Pltry Sc 830. Cross-listed in Animal Science, Food Science and Technology, Human Nutrition and Food Management, and Poultry Science.

**830.01+ Energy**

Latshaw, Palmquist, and Snook.

Sp Qtr.

**830.02\* Minerals**

Mahan.

Au Qtr.

**830.03+ Proteins and Amino Acids**

Johnson.

Sp Qtr.

**830.04\* Vitamins**

Lilburn.

Wi Qtr.

**830.05\* Lipids**

Allred.

Sp Qtr.

**830.07+ Rumen Microbiology**

Dehority.

Su Qtr. This course is not available in Human Nutrition and Food Management or Poultry Science.

**830.08+ Carbohydrates**

Roehrig.

Au Qtr.

**840 Advanced Studies in Molecular Endocrinology G 5**

Combined lecture/laboratory course on the molecular and cellular basis of hormone action and state-of-the-art methodologies in molecular endocrinology.

Su Qtr. Prereq: Biochem 511 or equiv and permission of instructor. Cross-listed in Animal Science and Poultry Science.

**850 Molecular Biology Techniques G 4**

Combined lecture/laboratory in the techniques of nucleic acid isolation, analysis, hybridization, sequencing, cloning, expression, and associated biotechnologies.

Su Qtr. 102-hr cl, 10 4-hr lab. Prereq: Biochem 521 or 613 or equiv. Not open to students with credit for Animal Science or Poultry Science 850. Cross-listed in Animal Science and Poultry Science.

**885\* Research Principles and Methods G 5**

Survey and analysis of research in dairy and animal science, literature reviews, collection of data, preparation of bibliographies, and presentation of reports. Allaire, Hines and Pate.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: Genetics 650, 8 cr hrs in math, and 2 qtrs grad study.

**894 Group Studies G 1-5**

Students are given an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor.

**898 Interdepartmental Seminar in Nutrition G 1**

A seminar in nutrition and in related fields of food technology.

Sp Qtr. Given cooperatively by Animal Science, Dairy Science, Food Science and Technology, and Poultry Science. This course is graded S/U.

**993 Individual Studies G 1-5**

Exploratory research and advanced assignments; students elect problems after conference with the instructor in charge.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Dance

132 Sullivant Hall, 1813 North High Street, 292-7977

### 111 Techniques and Materials of Dance I U 1-6

Open only to dance majors through qualifying audition. Each decimal subdivision repeatable to a maximum of 6 cr hrs.

#### 111.01 Improvisation

Wi Qtr. Arr. Prereq: Qualifying audition or permission of instructor.

#### 111.02 Dance Fundamentals

Sp Qtr. Arr. Prereq: 111.01 or qualifying audition or permission of instructor.

#### 111.03 Introduction to Dance Composition

Sp Qtr. Arr. Prereq: 111.01 or qualifying audition or permission of instructor.

#### 111.04 Modern Dance Technique, Part 1

Au Qtr. Arr. Prereq: Qualifying audition.

#### 111.05 Ballet Technique, Part 1

Au Qtr. Arr. Prereq: Qualifying audition.

#### 111.06 Modern Dance Technique, Part 2

Wi Qtr. Arr. Prereq: 111.04 or qualifying audition.

#### 111.07 Ballet Technique, Part 2

Wi Qtr. Arr. Prereq: 111.05 or qualifying audition.

#### 111.08 Modern Dance Technique, Part 3

Sp Qtr. Arr. Prereq: 111.06 or qualifying audition.

#### 111.09 Ballet Technique, Part 3

Sp Qtr. Arr. Prereq: 111.07 or qualifying audition.

#### 111.10 Music Skills

Au Qtr. Prereq: 111.01 or qualifying audition.

### 190 Ethnic Dance Forms U 1-5

Folk forms as practiced by ethnic groups in selected cultures.

Au Qtr. Arr. Prereq: Qualifying audition or permission of instructor. Each decimal subdivision repeatable to a maximum of 5 cr hrs.

#### 190.01 Dance Forms of the African Diaspora

#### 190.02+ International Dance Survey

#### 190.03+ Other

### 198 Dance Production U 1-5

Production activities.

Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

### 200 History of Ballet and Modern Dance U 5

Development of dance as a performing art in Europe and the United States from 1581 to the present; a survey of major stylistic trends, principal artists and their works.

Wi, Sp Qtrs. 3 1½-hr cl. BER/GEC/LAR course.  
VPA Admis Cond course.

### 201 Introduction to Dance I U 1-5

An introductory course in dance.

Su, Au, Wi, Sp Qtrs. Arr. Each decimal subdivision repeatable to a maximum of 12 cr hrs. VPA Admis Cond course.

#### 201.01 Modern Technique

#### 201.02 Ballet Technique

#### 201.03 Jazz

#### 201.04 Other

#### 201.05 Tap Technique

### 202 Introduction to Dance II U 1-5

Continuation of 201.

Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

#### 202.01 Modern Technique

Prereq: 201.01 or permission of instructor.

#### 202.02 Ballet Technique

Prereq: 201.02 or permission of instructor.

#### 202.03 Jazz

Prereq: 201.03 or permission of instructor.

### 203 Introduction to Dance III U 1-5

Continuation of 201 and 202.

Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

#### 203.01 Modern Technique

Prereq: 202.01 or permission of instructor.

#### 203.02 Ballet Technique

Prereq: 202.02 or permission of instructor.

#### 203.03 Jazz

Prereq: 202.03 or permission of instructor.

### 214 Dance Techniques II U 1-6

Technique: modern dance and ballet, level II.

Open only to dance majors. Each decimal subdivision repeatable to a maximum of 9 cr hrs.

#### 214.04 Modern, Part 1

Au Qtr. Arr. Prereq: Juried examination with the completion of 111.08 or qualifying audition.

#### 214.05 Ballet, Part 1

Au Qtr. Arr. Prereq: Juried examination with the completion of 111.01 or qualifying audition.

#### 214.06 Modern, Part 2

Wi Qtr. Arr. Prereq: 214.04 or qualifying audition.

#### 214.07 Ballet, Part 2

Wi Qtr. Arr. Prereq: 214.05 or qualifying audition.

#### 214.08 Modern, Part 3

Sp Qtr. Arr. Prereq: 214.06 or qualifying audition.

#### 214.09 Ballet, Part 3

Sp Qtr. Arr. Prereq: 214.07 or qualifying audition.

### 257 Modern Dance Overview U 3

An introduction to the history and aesthetic principles of modern dance from the turn of the 20th century to present.

Wi Qtr. 2 1½-hr cl. Prereq: Admission to dance major program.

### 289 Field Experience in Dance U 1-5

Foundations in dance education.

#### 289.01 Introduction to Dance Education

Survey of dance in public education: theoretical foundations and field-based experiences.

Sp Qtr. Arr. Prereq: 111.04 or permission of dance ed coordinator.

#### 289.02 Dance Education in Diverse Settings

Survey of dance in diverse community settings: theoretical foundations and field-based experiences.

Wi Qtr. Arr. Prereq: 289.01 or permission of dance ed coordinator.

#### 289.03 Other: Field Experience in Dance

Directed field experience emphasizing appropriate teaching strategies for different educational and community settings.

Su, Au, Wi, Sp Qtrs. Arr. for each cr hr 2 hrs/week in field placement. Prereq: 111.06 or permission of dance ed coordinator. Repeatable to a maximum of 10 cr hrs.

### 293 Individual Studies U 1-5

Individual studies of specified problems in the field of dance.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 294 Group Studies U 1-5

Prereq: Permission of chairperson. Repeatable to a maximum of 25 cr hrs.

### 299 Dance Performance U 1-5

Su, Au, Wi, Sp Qtrs. 2 or more hrs rehearsal wkly. Open only to dance majors; others by special permission. Each decimal subdivision repeatable to a maximum of 24 cr hrs.

#### 299.04 Student Choreographic Projects

#### 299.06 Workshops

### 489 Dance in Education U 2

The role, status, and theoretical foundations of dance in American education within a historical framework.

Sp Qtr. 3 1½-hr cl. Prereq: 289.01 and 289.02, or permission of instructor.

### 534 Dance Techniques III U G 1-6

Technique: modern dance and ballet, level III.

Open only to dance majors. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

#### 534.04 Modern, Part 1

Au Qtr. Arr. Prereq: Juried examination with the completion of 214.08 or qualifying audition.

#### 534.05 Ballet, Part 1

Au Qtr. Arr. Prereq: Juried examination with the completion of 214.09 or qualifying audition.

#### 534.06 Modern, Part 2

Wi Qtr. Arr. Prereq: 534.04 or qualifying audition.

#### 534.07 Ballet, Part 2

Wi Qtr. Arr. Prereq: 534.05 or qualifying audition.

#### 534.08 Modern, Part 3

Sp Qtr. Arr. Prereq: 534.06 or qualifying audition.

#### 534.09 Ballet, Part 3

Sp Qtr. Arr. Prereq: 534.07 or qualifying audition.

### 579 University Dance Company U G 1-5

Su, Au, Wi, Sp Qtrs. Arr daily; rehearsal hrs 4:30-10:00 p.m. Admission by audition. Open only to dance majors; others by special permission. Repeatable to a maximum of 45 cr hrs.

**586 Student Teaching in Dance  
in Elementary Schools U 3-15**

Observation, participation, and teaching in a public school; individual and group conferences or seminars.

Au, Wi, Sp Qtrs. Prereq: EDU 4th yr standing. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**587 Student Teaching in Dance  
in Secondary Schools U 3-15**

Observation, participation, and teaching in a public school; individual and group conferences or seminars.

Au Wi, Sp Qtrs. Prereq: EDU 4th yr standing. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**601 Supplemental Studies in Dance U G 1-5**

Foundations in dance.

Su, Au, Wi, Sp Qtrs. 2 or more lab hrs. Prereq: Permission of chairperson. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

**601.01 Modern Technique****601.02 Ballet Technique****601.04 Tap Dance****601.05 Historical Dance****601.06 Jazz Dance****601.07 Alexander Technique**

This course is graded S/U.

**601.08 Other****605\* Introduction to Effort U G 3**

Study of the dancer's dynamic energy.

Au Qtr. 2 1½-hr cl. Prereq: 645 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**606\* Introduction to Space Harmony U G 3**

The study of spatial forms in dance.

Wi Qtr. 2 1½-hr cl. Prereq: 620 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**610 Issues in Videodance U G 3**

Investigation of aesthetic and technological components of dance and video as an introduction to studies in videodance production.

Wi Qtr. 1 2-hr cl. Prereq: 200 or 257, or Art Educ 160 or Arts Col 161, and jr standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**615 Music Resources for Dance U G 2**

Investigation of music skills and their application to teaching and choreography.

Su, Wi Qtrs. Arr. 1 2-hr cl. Prereq: 111.10, grad standing, or permission of instructor. Repeatable to a maximum of 4 cr hrs.

**620 Dance Notation I U G 3**

Basic principles of Labanotation; work in theory, readings, and writing using motif descriptions.

Au Qtr. Arr. Prereq: 1 yr as dance major or permission of instructor.

**621 Dance Notation II U G 3**

Continuation of 620; emphasis on Labanotation.

Wi Qtr. Arr. Prereq: 620 or permission of instructor.

**622 Dance Notation III U G 3**

Continuation of 621; emphasis on reading dance.

Sp Qtr. Arr. Prereq: 621 or permission of instructor.

**623 Advanced Notation U G 3**

Advanced Labanotation.

Au, Sp Qtrs. Arr. Prereq: 622 or equiv with written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**624 Directing from Score U 4**

Methods of teaching and coaching a dance learned from a Labanotated score.

Su, Au, Wi, Sp Qtrs. 3 1½-hr cl. Prereq: 623. Repeatable to a maximum of 16 cr hrs.

**633 Lighting for Dance U G 3 or 5**

A study of stage lighting for dance; lectures, readings, and discussions.

Au, Sp Qtrs. Arr. Prereq: 198 or equiv.

**635\* Intermediate Effort U G 3**

Intermediate study of the dancer's dynamic energy; continuation of 605.

Sp Qtr. 2 1½-hr cl. Prereq: 605 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**637 Dance Technique IV U G 1-6**

Technique: modern and ballet, level IV.

Open only to dance majors. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

**637.04 Modern, Part 1**

Au Qtr. Arr. Prereq: Juried examination with the completion of 534.08 or qualifying audition.

**637.05 Ballet, Part 1**

Au Qtr. Arr. Prereq: Permission of instructor.

**637.06 Modern, Part 2**

Wi Qtr. Arr. Prereq: 637.04.

**637.07 Ballet, Part 2**

Wi Qtr. Arr. Prereq: Permission of instructor.

**637.08 Modern, Part 3**

Sp Qtr. Arr. Prereq: 637.06.

**637.09 Ballet, Part 3**

Sp Qtr. Arr. Prereq: Permission of instructor.

**645 Foundations in Dance Composition I U G 1-5**

Au Qtr. Arr. Prereq: 111.03 or equiv. Open only to dance majors or by permission of instructor. Repeatable to a maximum of 12 cr hrs.

**646 Foundations in Dance Composition II U G 1-5**

Wi Qtr. Arr. Prereq: 645. Open only to dance majors. Repeatable to a maximum of 12 cr hrs.

**647† Foundations in Dance Composition III U G 1-5**

Arr. Prereq: 646. Open only to dance majors. Repeatable to a maximum of 12 cr hrs.

**648 Music and Choreography U G 3**

Study of music suitable for choreographic purposes and the various approaches to the use of music in dance composition.

Sp Qtr. Arr. Prereq: 649 or equiv, and Music 141.

**649 Intermediate Dance Composition U G 3**

Dance studies for small groups.

Au Qtr. Arr. Prereq: 646.

**650 Advanced Dance Composition U G 1-5**

Choreographing and producing a dance in a performance setting.

Au, Wi, Sp Qtrs. Arr. Prereq: 648 or equiv. Repeatable to a maximum of 13 cr hrs.

**651 Repertory U G 1-5**

Experience in learning a dance.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 214.08 or permission of instructor. Open only to dance majors. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

**651.01 Existing Work****651.02 New Work****657 History of Dance I U G 3**

Survey of dance as a communal activity, functioning as ritual, art, and play, with particular emphasis on dance in tribal cultures and in the Greek theatre.

Sp Qtr. Arr.

**658 History of Dance II U G 3**

Survey of dance from medieval times to the late 18th century, with particular emphasis on dance styles of the 15th through the 18th centuries.

Au Qtr. Arr.

**659 History of Dance III U G 3**

Survey of dance in Europe and the United States from the end of the 18th century to the present with emphasis on ballet and modern dance.

Wi Qtr. 4 cl.

**670 Dance Fundamentals II U G 1-4**

An investigation of movement awareness principles and learning techniques (Alexander and Bartenieff in particular) and their practical application to dance material.

Wi Qtr. Arr. Prereq: Jr standing and permission of instructor. Repeatable to a maximum of 4 cr hrs.

**671 Kinesiology for Dance U G 3**

Exploration of the skeleton and muscles for mechanical efficiency in movement, including principles of stability and motion as they relate to dance.

Sp Qtr. 2 1½-hr cl, 1 lab. Prereq: Jr standing and Zoology 235 recommended.

**687 Dance for Children U G 3-5**

Foundation for teaching dance to children.

Au Qtr. Arr. Not open to students with credit for 687.

**687.01 Fundamentals of Children's Dance U G 3**

Wi Qtr. 3 1/2-hr cl. Prereq: 214.08 and 489, or permission of dance ed coordinator.

**687.02 Children's Dance in Educational Settings U G 3**

Sp Qtr. 3 1/2-hr cl. Prereq: 214.08 and 687.01, or permission of dance ed coordinator.

**688 Methods and Materials of Teaching Modern Dance U G 3-5**

Foundations for teaching; laboratory problems, lectures, readings, and discussions.

Au Qtr. Arr. Prereq: 214.08 or permission of instructor.

**689 Directed Teaching Experience in Dance U G 1-5**

Designed to aid prospective teachers of dance in their development of essential teaching skills in a variety of settings.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**691 Dance Practicum I U G 1-5**

Special applied projects for upper level dance majors.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs.

**692 Workshop in Dance U G 1-15**

Concentrated study of dance and related areas; nature of workshop depends upon selected emphasis.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of workshop director. Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies in Dance U G 1-5**

Investigation of selected professional problems.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs in any combination of decimal subdivisions for undergrad cr and to a maximum of 30 cr hrs in any combination of decimal subdivisions for grad cr. These courses are graded S/U.

**693.01 Choreography**

Prereq: 648. Open only to dance majors with written permission of adviser or chairperson.

**693.02 Laban Studies**

Prereq: Written permission of dance adviser or chairperson.

**693.03 Research**

Prereq: Written permission of dance adviser or chairperson. Open only to dance majors.

**693.04 Production**

Prereq: Written permission of dance adviser or chairperson. Open only to dance majors.

**693.05 Other**

Prereq: Permission of chairperson.

**694 Group Studies U G 1-5**

Prereq: Permission of chairperson. Repeatable to a maximum of 25 cr hrs.

**699 Dance Performance U G 1-5**

Su, Au, Wi, Sp Qtrs. 2 or more hrs of rehearsal wkly. Prereq: Permission of chairperson. Open only to dance majors; others by permission of chairperson. Each decimal subdivision repeatable to a maximum of 24 cr hrs.

**699.04 Student Choreographic Projects****699.06 Workshops****759 Postmodernism in Dance U G 3 or 5**

An inquiry into aesthetic points of view, beliefs, and assumptions inherent in dance practices and dance criticism from the 1960's to the present.

Sp Qtr. 2 1/2-hr cl. Prereq: 200, 257, 659, or Arts Col 161, or permission of instructor.

**H783 Honors Research U 3-5**

A program of research and/or dance investigation for each student with individual conferences resulting in an honors thesis or honors project.

Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a pt-hr ratio of 3.50 in dance, permission of the instructor under whose supervision the work is to be completed, and the Honors Committee of either the College of the Arts or the College of Education. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**786 Student Teaching in Dance in Elementary Education U G 3-15**

Observation, participation, and teaching in a public school; seminars and individual conferences.

Au, Wi, Sp Qtrs. Arr. Prereq: 689 and permission of dance educ coordinator. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**787 Student Teaching in Dance in Secondary Education U G 3-15**

Observation, participation, and teaching in a public school; seminars and individual conferences.

Au, Wi, Sp Qtrs. Arr. Prereq: 689 and permission of dance ed coordinator. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**801 Seminar in Dance G 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**802 Choreographic Projects G 1-5**

Advanced choreographic projects.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 25 cr hrs.

**803 Elements of Dance I G 2**

Wi Qtr.

**804 Elements of Dance II G 2**

Wi Qtr.

**805+ Advanced Effort G 3**

Continuation of 605 and 635.

Wi Qtr. 2 1/2-hr cl. Prereq: 605 or 635 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**806+ Advanced Space Harmony G 3**

Continuation of 606 and 636.

Wi Qtr. 2 1/2-hr cl. Prereq: 606 or 636 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**807 Foundations of Labananalysis G 2**

An examination of the spatial structure and dynamic rhythm of bodily movement in dance through the Laban framework.

Sp Qtr. 1 2-hr cl. Prereq: 804.

**820 Labanotation I G 4**

Five-week study of Motif Writing/Description and five-week elementary course in Labanotation.

Au Qtr. 3 1/2-hr cl.

**821 Labanotation II G 4**

Continuation of 820.

Wi Qtr. 3 1/2-hr cl. Prereq: 820 or permission of instructor.

**822 Labanotation III G 4**

Continuation of 821.

Sp Qtr. 3 1/2-hr cl. Prereq: 821 or permission of instructor.

**823 Labanotation IV G 3-5**

Reading, analysis, and writing of complex movement ideas.

Su, Au, Wi, Sp Qtrs. 3 1/2-hr cl. Prereq: 822 or equiv. Repeatable to a maximum of 20 cr hrs.

**824 Directing from Score G 1-5**

Teaching and coaching a dance learned from a Labanotated score.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: One qtr of 823. Repeatable to a maximum of 15 cr hrs.

**845 Issues of Choreography I G 3**

Investigation of the choreographic process; emphasis on the dynamics of movement.

Au Qtr. 2 1/2-hr cl. Prereq: Admission to grad program in dance or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**846 Issues of Choreography II G 3**

Continued investigation of the choreographic process; emphasis on structure.

Wi Qtr. 2 1/2-hr cl. Prereq: 845 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**847 Issues of Choreography III G 3**

Continued investigation of the choreographic process; emphasis on choreographic invention, structure, and context.

Sp Qtr. 2 1/2-hr cl. Prereq: 846 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**879 University Dance Company G 1-5**

The University Dance Company functions as a professional training ground for selected students; students assume major roles and responsibilities.

Su, Au, Wi, Sp Qtrs. Arr daily; rehearsal hrs 4:30-10:00 pm. Admission by audition. Repeatable to a maximum of 45 cr hrs.

**893 Individual Studies in Dance G 1-5**

Investigation of selected professional problems.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs in any combination of decimal subdivisions. These courses are graded S/U.

- 893.01 Choreography
- 893.02 Laban Studies
- 893.03 Research
- 893.04 Production
- 893.05 Other

**894 Group Studies G 1-5**

Advanced problems in dance; individual or group participation. Repeatable to a maximum of 30 cr hrs.

**970 Master's Project G 1-30**

Research and practical investigation of selected topics for purposes of the Plan B master's project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Evidence of substantial work in proposed area and grad standing in dance. Repeatable to a maximum of 30 cr hrs. These courses are graded S/U.

- 970.01 Choreography and/or Performance
- 970.02 Directing and Reconstruction
- 970.03 Documentation and Analysis of Field Research
- 970.04 Production
- 970.05 Other

**999 Research in Dance G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Dental Hygiene

3070 Postle Hall, 305 West 12th Avenue, [lb 292-2228

**201 Oral Anatomy and Tooth Morphology U 4**

Morphology and physiology of human teeth and surrounding structures. 2 cl, 1 recitation, 3 lab hrs. Prereq: Dent hyg soph standing.

**222 Perio I**

Wi Qtr. Prereq: 417.

**223.01 Lecture U 3**

Understanding of the periodontium in relation to the etiology of periodontal disease, the formation of deposits on teeth and the recognition, classification, and prevention of periodontal disease. 3 cl.

**223.02 Laboratory U 4**

Demonstration of the application of technical procedures for the removal of hard and soft deposits from the surfaces of the teeth, and function as a co-therapist in the prevention, recognition, and treatment of periodontal disease. 12 lab hrs.

**224 Perio II**

Sp Qtr. Prereq: Basic psychology, and concur 224.02.

**224.01 Lecture U 2**

A study of patient management in the practice of dental hygiene to promote the achievement of personal and professional growth as an integral member of the dental health team. 2 cl. Prereq: Basic psych.

**224.02 Clinic U 2**

Clinical application of the principles and technical procedures taught in 223. 6 cl hrs. Prereq: 223, 233, and 264 and Dent 545.

**233 Oral Histology and Embryology U 2**

A study of the microscopic anatomy of the teeth and surrounding structures; the development of the teeth, oral cavity, and face.

Wi Qtr. 2 cl. Prereq: Dent hyg 1st yr standing and basic biology; and concur: anatomy.

**240 Introduction to General Pathology U 2**

An introduction to the basic principles of pathology and mechanisms of disease; the pathophysiology of common problems involving the various organ systems with emphasis on clinical manifestations.

Sp Qtr. 2 1-hr cl. Prereq: 233 and prereq or concur: Zoology 232.

**250 Restorative Dentistry I U 1**

Introduction to the terminology and concepts of cariology and the use of effective preventive techniques.

Sp Qtr. 1 1-hr cl. Prereq: DH 201.

**263 Oral Radiography U 3**

The theory and technical procedures of oral radiography.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: DH 201 and soph standing.

**264 Oral Radiography Laboratory U 1**

Oral radiography for dental hygienists.

Wi Qtr. 3-hr lab. Prereq: DH 201 and soph standing; Dent 545 concur. Not open to student with credit for 263.

**273 Dental Materials U 4**

A study of the composition, chemical and physical properties, manipulation, and uses of various materials employed in the practice of dentistry.

Sp Qtr. 2 cl, 6 lab hrs. Prereq: Dent hyg 1st yr standing and Chem 102. Not open to students with credit for 372.

**295 Introduction to Dental Hygiene U 1**

Introduction to the historical, professional, legal, and ethical aspects of dental hygiene.

Au Qtr. 1 cl. Prereq: Dent hyg soph standing.

**301 Pain Control U 1**

The role of the dental hygienist as an assistant in anesthesia; premedication; physiological responses to and pharmacological actions of anesthetic agents; emergency treatment.

Wi Qtr. 1 cl or 3 lab hrs. Prereq: 321 and 331, and Anatomy 199 or Zoology 235.

**321 Perio III**

Au Qtr. Prereq: 224.01, 224.02, 240, and 273.

**321.01 Lecture U 2**

Philosophy and techniques of prevention of periodontal disease.

2 cl. Prereq: 224.01, 224.02, 240, and 273.

**321.02 Clinic U 4**

Clinical application of principles taught in 223.

12 hrs. clinical. Prereq: 224.01, 224.02, 237, 240, and 273.

**322 Perio IV**

Wi Qtr. Prereq: 321, 330, 331, and 341; and DH 330.

**322.01 Lecture U 1**

A continuation of 321.01; prepares students to provide appropriate preventive and therapeutic services necessary for the prevention of periodontal diseases within the concept of periodontal maintenance therapy.

1 cl.

**322.02 Clinic U 3**

A continuation of 321.02.

9 hrs. clinic.

**323 Perio V**

Sp Qtr. Prereq: 322.

**323.01 Lecture U 1**

A continuation of 322.01; expands content and experience in periodontology and promotes analytical skills in assessment and in dental hygiene treatment planning for patients.

1 cl.

**323.02 Clinic U 3**

A continuation of 322.02.

**330 Care for Patients with Special Needs U 2**

Development of background to facilitate recognition of the special-needs patient and techniques in dental hygiene care for this population.

Au Qtr. 1 2-hr cl. Prereq: Dent hyg jr standing or permission of instructor.

**331 Pharmacology U 3**

A study of pharmacology including the biochemical basis of drugs used in dentistry which have implications for dental patients and the application of pharmacological agents for specific usage.

Au Qtr. 3 cl. Prereq: 223.01, 240, and Zoology 232.

**338 Pediatric Dentistry U 2**

Lectures, laboratory, and clinical exercises to prepare students to provide for the pediatric patient.

Au Qtr. 1 cl, 2 lab hrs. Prereq: Jr standing.

**341 Introduction to Oral Diagnosis and Oral Pathology U 2**

Introduction to the diagnostic process; pathogenesis, and symptomatology and treatment of oral disease.

Au Qtr. 2 cl. Prereq: 240.

**350 Restorative Dentistry II U 2**

The theory and technical procedures for the restoration of compound cavity preparations with amalgam alloy and filled resins.

Su Qtr. 1 cl, 3 lab hrs. Prereq: Successful completion of 250.



## 98 Dental Hygiene

### 351 Restorative Dentistry III U 3

An overall view of the procedures utilized by advanced qualified personnel in basic and advanced restorative dentistry; theory and technical procedures. Su Qtr. 2 cl, 3 lab hrs. Prereq: 351 or concur..

### 352 Expanded Functions Clinic I U 2

Clinical application of expanded function duties permitted by law. Su Qtr. 6 clinic hrs. Prereq or concur: 351.

### 362 Assessment and Management of the Geriatric Patient U 1

Fosters an understanding of the special considerations needed to provide dental care to geriatric patients; requires extensive knowledge of the total patient situation.

Sp Qtr. 1 cl. Prereq: Dent hyg jr standing.

### 381 Community Dental Health I U 1

An introduction to community dental health and the planning and initiation of community dental health projects.

Au Qtr. 1 cl. Prereq: 223, and 295, and Humn Ntr 310.

### 382 Oral Hygiene in the Community U 1

Effective dental health education of the public, especially children, and current educational concepts, methods, and resources as applied to teaching oral health.

Wi Qtr. 1 cl. Prereq: Dent hyg jr standing.

### 383 Introduction to Research and Statistical Methods U 5

Methods utilized in community health research, including study design, sampling, data collection, and the use of statistical tools in the interpretation of quantitative data.

Wi Qtr. 4 1-hr cl, 1 2-hr recitation, or microcomputer lab. Prereq: Dent hyg jr standing. GEC course.

### 384 Dental Hygiene Care for the Mentally Retarded and Developmentally Disabled U 1-5

Various handicapping conditions and any oral manifestations; management techniques and practice in a clinical setting; comprehensive on-going follow-up in the group home setting.

Au, Wi, Sp Qtrs. 1 cl and arr. Prereq: 223, dent hyg 2nd yr standing, and permission of instructor.

### 403 Office Practices and Economics U 2

Examination of the economic and management factors which impact the dental office today.

Au Qtr. 2 cl. Prereq: Dent hyg sr standing. Not open to students with credit for 303. GEC course.

### 410 Occlusion U 2

A study of the growth and development of the teeth, the mandible and maxilla, and their interrelation.

Au Qtr. 1 cl, 3 lab hrs. Prereq: 3rd yr standing in BSDH program.

### 411 Perio VI

Au Qtr.

#### 411.01 Lecture U 2

A continuation of 323.01; includes the evaluation of results of dental hygiene therapy and a review of the literature.

3-hr cl. Prereq: 323 and enrollment in dent hyg program.

#### 411.02 Clinic U 3

A continuation of 323.02 for dental hygiene students.

9 hrs clinical. Prereq: 323 and enrollment in dent hyg program.

### 412 Perio VII

Wi Qtr.

#### 412.01 Lecture U 1

A continuation of 411.01 and addition of planning, implementing, and evaluating a research project.

1 cl. Prereq: 411 and enrollment in dent hyg.

#### 412.02 Clinic U 3

A continuation of 411.02.

9 hr clinic. Prereq: 411.

### 413 Dental Hygiene Practice U 1

A study of the actual practice in the dental office and of the responsibilities inherent in dental hygiene to the profession and the community.

Wi Qtr. 1 cl. Prereq: Dent hyg sr standing. Not open to students with credit for 313. GEC course.

### 420 Oral Radiography and Interpretation U 1

Interpretation of radiographic normal anatomic structures and pathologic entities; radiation hygiene.

Au Qtr. 1 cl. Prereq: 263 or Dent 545 and dent hyg 264, dent hyg sr standing. Not open to students with credit for 320.

### 450 Expanded Functions Clinic II U 2

A continuation of 352.

Au Qtr. 6 clinic hrs. Prereq: 352.

### 451 Expanded Functions Clinic III U 2

A continuation of 450.

Wi Qtr. 6 clinic hrs. Prereq: 450.

### 452 Expanded Functions Seminar U 2

Seminar on current expanded functions practice management techniques and current law in Ohio including practical experiences in preparation for Ohio Expanded Functions Qualifying Examination.

Sp Qtr. 1 cl, 1 2-hr lab. Prereq: 451.

### 485 Current Concepts in the Practice of Dental Hygiene U 2

Seminar designed to assist students with legal, ethical, and philosophical concerns of the dental hygienist as a contemporary health care professional.

Sp Qtr. 2 hrs lecture. Prereq: 3rd yr standing in BSDH program. GEC course.

### 486 Practicum in Dental Hygiene U 2-6

Supervised practice outside the traditional clinic in a setting similar to the one in which the dental hygiene student may practice, teach, or conduct research upon graduation.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in dent hyg. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

### 488 Senior Seminar U 1

Focus on the current body of dental hygiene knowledge and the relevance to dental hygiene practice.

Wi Qtr. 1 cl. Prereq: Graduating sr standing.

### 521 Inquiry into Periodontal Care Issues U 2 or 3

Advanced periodontics; affords students the opportunity to become involved in data collection for longitudinal research studies in clinical periodontics.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 412 or equiv and sr standing in dent hyg or RDH grad level. Enrollment by permission: selection will be based on student's clinical and didactic performance. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

### 693 Individual Studies in Dental Hygiene U G 1-15

Advanced studies in any relevant area of dental hygiene. Staff.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 694 Group Studies in Dental Hygiene U G 1-5

Group studies in special dental hygiene areas. Staff.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission. Repeatable to a maximum of 15 cr hrs.

## Dentistry

1159 Postle Hall, 305 West 12th Avenue, 292-2401

The P mark is used in a designated series or sequence of clinical courses where the mark A, B, C, D, or E is not recorded until the final course of the series or sequence is completed. The P mark indicates that the total sequence has not been completed and authorizes the student to progress into the next consecutive course of that particular series or sequence. This mark of itself indicates neither satisfactory performance or unsatisfactory performance. When a final mark is submitted by the instructor, all previous P marks shall assume and be recorded with the value of the final mark. Until such time as a final mark is recorded, the mark of P shall be given and the credit shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio.

### 417 Oral Anatomy P 3

Anatomy of the oral region, dental morphology with laboratory experience.

Au Qtr. 2 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

### 421 Community Dentistry P 1

History of dentistry; principles of epidemiology, particularly disease of the oral cavity; demographics of oral diseases; and disease prevention procedures from a community standpoint.

Au Qtr. 1 cl. Prereq: Dent 1st yr standing.

### 422 Community Dentistry P 2

Preventive dentistry and patient education; patient motivation and learning; and nutrition and exercise.

Sp Qtr. 2 cl. Prereq: Dent 1st yr standing.

### 431 Restorative Dentistry P 1

Dental materials in restorative and prosthetic dentistry; structures, interactions, biological considerations, physical and chemical properties, and uses of dental materials.

Au Qtr. 1 cl. Prereq: Dent 1st yr standing.

**432 Restorative Dentistry P 3**

Principles and techniques for inlay, MOD onlay, and complete veneer crown preparation.

Wi Qtr. 1 cl, 6 lab hrs. Prereq: Dent 1st yr standing.

**433 Restorative Dentistry P 2**

Introduction to occlusion, emphasizing form and function; the occlusal role of posterior teeth in mandibular movement is stressed; includes waxing exercises.

Wi Qtr. 1 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

**434 Restorative Dentistry P 3**

Continuation of 432.

Sp Qtr. 1 cl, 6 lab hrs. Prereq: Dent 1st yr standing.

**435 Restorative Dentistry P 2**

Principles and techniques of preparation and design of mandibular cast fixed partial denture.

Sp Qtr. 1 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

**482 Removable Complete Prosthodontics P 1**

Fabrication of complete dentures: impression making, cast mounting, arranging artificial teeth, processing acrylic resin and finishing, polishing, and completing dentures.

Prereq: Dent 2nd yr standing.

**482.01 Lecture**

Wi Qtr.

**482.02 Laboratory**

Laboratory for 482.01.

Wi Qtr. 4 lab hrs.

**489 Removable Partial Prosthodontics P 1**

Prereq: Dent 1st yr standing.

**489.01 Lecture**

An introduction to the principles of design and construction of removable partial dentures.

Wi Qtr. 1 cl.

**489.02 Laboratory**

Wi Qtr. 4 lab hrs.

**505 Fundamental Principles of Oral Surgery P 2**

Basic principles of oral surgery; patient evaluation and management, surgical instrumentation theory and technique for infection control, teeth extraction, and restorative preparation.

Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**513 Immunology P G 2**

Basic understanding of immune and inflammatory processes with special attention to areas related to the oral cavity.

Au Qtr. 2 cl. Prereq: Dent 2nd yr standing.

**514 Oral Biology P G 4**

Oral embryology and histology of teeth and surrounding structures and their correlation to the practice of dentistry.

Au Qtr. 2 cl, 4 lab hrs. Prereq: Dent 2nd yr standing and Anat 603.

**521 Behavioral Factors in Dentistry P 1**

Examination of the principles and dynamics of human behavior with emphasis on the psychosocial components of dentist-patient relationships and their consequences for dental practice.

Au Qtr. 1 cl. Prereq: Dent 1st yr standing.

**531 Restorative Dentistry P 2**

Theory, principles, and procedures for tooth preparations to receive posterior metal ceramic crowns; includes the fabrication of a metal ceramic fixed partial denture.

Au Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

**532 Restorative Dentistry P 2**

Functional and cosmetic aspects of anterior teeth; continuing of the study of mandibular movement.

Au Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

**533 Restorative Dentistry P 2**

Restoration of posterior teeth using composite resin, amalgam, and glass ionomer materials.

Au Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

**534 Restorative Dentistry P 2**

Contemporary aesthetic dental treatments; aesthetic restorative methods and materials in operative dentistry.

Wi Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

**535 Restorative Dentistry P 3**

Theory, principles, and techniques for anterior tooth preparations to receive aesthetic crowns and fixed partial dentures.

Wi Qtr. 1 cl, 6 lab hrs. Prereq: Dent 2nd yr standing.

**536 Restorative Dentistry P**

Theory and techniques for fabricating correctly contoured provisional restorations; cast posts/cores; porcelain application and customizing (contouring, staining, and glazing).

1 cl. 2 lab hrs.

**536.01 Restorative Dentistry I 1**

Theory and technique for the restoration of endodontically treated teeth.

Sp Qtr. Prereq: Dent 2nd yr standing.

**536.02 Restorative Dentistry II 2**

Theory and technique for fabricating metal and ceramic restorations.

Su Qtr. Prereq: Dent 3rd yr standing.

**537 Restorative Dentistry P 2**

Theory, principles, and techniques for restoring atypically damaged single teeth with directly placed and cast materials.

Sp Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

**544 Physical Evaluation P 2**

Basic and current concepts in dental management of ambulatory patients with compromised medical systems; diagnosis and management of common dental office emergencies.

Wi Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**545 Diagnostic Sciences I P 2**

Dental patient evaluation that identifies dental and pertinent medical problems including head, neck, and oral cavity examinations; managing lab tests, and radiographs and diagnosis.

Wi Qtr. 2 cl. Prereq: Dent 2nd yr standing. Not open to students with credit for 547.

**548 Diagnostic Sciences II P 3**

Oral diagnosis, radiology, and pathology; radiographic techniques and interpretation; clinical appearance and diagnosis of normal and non-normal oral anatomy.

Sp Qtr. 3 cl. Prereq: Dent 2nd yr standing. Not open to students with credit for 549.

**551 Pediatric Dentistry P 1**

Introduction to pediatric dentistry with emphasis on growth and development, diagnostic procedures, treatment planning, and case presentation.

Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**552 Pediatric Dentistry Laboratory P 1**

Orientation in pediatric dentistry preparatory for clinical assignments: selected preventive and restorative techniques.

Su Qtr. 3 lab hrs. Prereq: Dent 3rd yr standing. Meets formally but also includes a self-instructional unit.

**556 Orthodontics P 1**

An introduction to craniofacial growth and development with applications toward orthodontic care.

Wi Qtr. 1 cl. Prereq: Dent 1st yr standing.

**564 Periodontology P 3**

Diagnosis etiology and activity of periodontal diseases; biology and pathophysiology of the disease process.

Wi Qtr. 3 cl. Prereq: Dent 2nd yr standing.

**565 Periodontology P 3**

Examination treatment planning and instrumentation of the periodontal diseased patient; clinical and interdisciplinary management of periodontal diseases.

Sp Qtr. 2 cl. 6 3-hr clinics. Prereq: Dent 2nd yr standing.

**567 Endodontics P 1**

Basic techniques and procedures used in the treatment of pulpless teeth.

Sp Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**568 Endodontics P 1**

Laboratory experience in endodontics.

Su Qtr. 2 lab hrs for 5 wks. Prereq: Dent 3rd yr standing.

**569 Endodontics P 1**

The rationale and prognosis of endodontic procedures; application of treatment techniques peculiar to endodontics, including radiography, intracanal preparations, and root fillings.

Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**571 Pharmacology P 1**

Introductory pharmacology including pharmacodynamics, pharmacokinetics, pharmacotherapeutics, neuromuscular blocking drugs, anti-diabetic agents, hormones, local anesthetics, drug regulations, prescription writing, and drug abuse.

Au Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**572 Pharmacology P 1**

Autonomic pharmacology including cholinergics, anti-cholinergics, adrenergics, anti-adrenergics, and respiratory drugs; anti-inflammatory drugs, narcotic, and non-narcotic analgesics.

Wi Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**579 Local Anesthesiology P 1**

The theory, chemistry, and techniques of local anesthesia for dental procedures.

Sp Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**582 Removable Complete Prosthodontics P 1**

Prereq: Dent 1st yr standing.

**582.01 Lecture**

Introduction to prosthodontics: fabrication of impressions, casts, and custom trays; chemical and physical aspects of dental materials used.

Au Qtr. 1 cl.

**582.02 Laboratory**

Au Qtr. 4 lab hrs.

**583 Removable Complete Prosthodontics P 1**

The clinical implications of complete denture construction.

Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**587 Removable Partial Prosthodontics P 1**

Prereq: Dent 1st yr standing.

**587.01 Lecture**

Introduction to removable partial denture vocabulary, concepts, and philosophy of treatment.

Sp Qtr. 1 cl.

**587.02 Laboratory**

Sp Qtr. 4 lab hrs.

**589 Removable Partial Prosthodontics P 1**

The advanced principles and design of removable partial dentures and their clinical applications.

Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**593 Individual Studies P 1-6**

Individual studies in any of the recognized fields of dentistry.

Su, Au, Wi, Sp Qtrs. Prereq: Dent 1st yr or 2nd yr standing. Repeatable. This course is graded S/U.

**601 Clinical Oral Surgery P 2**

Evaluation, diagnosis, treatment planning, surgery, and post-operative management of patients in clinic.

Sp Qtr. 4 clinic hrs. Prereq: Dent 3rd yr standing.

**614 Advanced Topics in Oral Biology P 2**

A critical examination of research reports to emphasize the scientific basis of oral health practice; attempts to unite the scientific foundation of dentistry to its clinical practice.

Wi Qtr. Prereq: Dent 3rd yr standing.

**620 Orientation to Clinical Dentistry P 1-10**

Interdisciplinary orientation and direct guidance to clinical practice including clinical policies; procedures; time, patient, and treatment management through individual conferences, classroom presentations, and clinical practice.

Su, Au, Wi, Sp Qtrs. Prereq: Dent 3rd yr standing. Repeatable to a maximum of 18 cr hrs.

**621 Dental Ethics P 1**

Advanced study and critical analysis of the ethical issues associated with the day to day practice of the profession.

Au, Wi, Sp Qtrs. 3 3-hr cl. Prereq: Dent 3rd yr standing.

**623 Community Dentistry P 1**

Dental care for the special-needs patient; understanding of the total patient situation, mobility, psychosocial, medical issues, and interpersonal relations.

Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**624 Clinical Preventive Dentistry P 1**

Clinical application of prevention techniques aimed at patient education; including aspects of plaque control, diet and nutrition, and therapeutics.

Sp Qtr. 3 cl. Prereq: Dent 3rd yr standing.

**630 Restorative Dentistry P 2**

Techniques for collecting information necessary to diagnose accurately and plan complex prosthodontic care; integrates theory into clinical practice.

Sp Qtr. 1 cl, 3 lab/clinic hrs. Prereq: Dent 2nd yr standing.

**631 Restorative Dentistry P 1**

Restorative clinical requirements and procedures plus information on tooth isolation, pulpal protection, laboratory prescriptions and protocol, and pulpal response to restorative procedures.

Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**632 Restorative Dentistry P 1**

Comprehensive diagnosis and treatment planning for restorative and prosthetic dentistry.

Au Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**633 Restorative Dentistry P 1**

Clinically applied principles for restorative and fixed prosthodontics; includes fluid control, soft-tissue management, electrosurgery, posts and cores, crowns, and fixed partial dentures.

Wi Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**634 Restorative Dentistry P 1**

Complex prosthodontic treatment considerations; presents treatment considerations for patients with temporomandibular disorders, removable partial dentures, and worn dentitions.

Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**635 Clinical Restorative Dentistry P 4**

Clinical experience in single tooth and fixed partial denture therapy including diagnosis, prognosis, treatment planning, hard and soft tissue management, restoration, and recall procedures.

Au Qtr. 12 hrs clinical. Prereq: Dent 3rd yr standing. This course is offered in a series with 636 and 637. A 'P' mark as defined by the College of Dentistry may be used.

**636 Clinical Restorative Dentistry P 4**

Continuation of 635.

Wi Qtr. 12 hrs clinical. Prereq: Dent 3rd yr standing. A 'P' mark as defined by the College of Dentistry may be used.

**637 Clinical Restorative Dentistry P 4**

Continuation of 635 and 636.

Sp Qtr. 12 hrs clinical. Prereq: Dent 3rd yr standing. This is the final course of the series. A 'P' mark as defined by the College of Dentistry may be used.

**645 Diagnostic Sciences III P 2**

Provides etiology, pathogenesis, clinical and microscopic features, and management of mucocutaneous disorders, microbial disease, reactive lesions, AIDS, and salivary gland disease.

Su Qtr. 2 cl. Prereq: Dent 3rd yr standing. Not open to students with credit for 542.

**648 Diagnostic Sciences IV P G 2**

Oral pathology; study of clinical appearance epidemiology, etiology, diagnosis, and histopathology of common and rare lesions of oral hard and soft tissues.

Au Qtr. 2 cl. Prereq: 514, Path 655, and Dent 3rd yr standing. Not open to students with credit for 543.

**651 Pediatric Dentistry****651.01 Pediatric Dentistry Lecture P 2**

Orientation in pediatric dentistry for clinical assignment: behavior management, prevention, restorative procedures, pulp therapy, and developmental disabilities.

Au Qtr. 2 cl. Prereq: Dent 3rd yr standing and 551.

**651.02 Clinical Pediatric Dentistry P 1**

Clinical series with continuation in 652.02 and 653.

Au Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing. A 'P' mark as defined by the College of Dentistry may be used.

**652 Pediatric Dentistry****652.01 Pediatric Dentistry P 1**

Miscellaneous topics relating to pediatric dentistry such as: trauma, sedation, and space maintenance.

Wi Qtr. 1 cl. Prereq: 651.01.

**652.02 Clinical Pediatric Dentistry P 1**

Clinical series continuation of 651.02.

Wi Qtr. 2 clinic hrs. Prereq: 651.02. A 'P' mark as defined by the College of Dentistry may be used.

**653 Clinical Pediatric Dentistry P 1**

Continuation of 651.02 and 652.02; clinic may include rotations at Coshocton Children's Clinic and/or Nisonger Center.

Sp Qtr. 2 clinic hrs. Prereq: 651.02 and 652.02. A 'P' mark as defined by the College of Dentistry may be used.

**654 Orthodontics P 1**

Orthodontic differential diagnosis, characteristics of ideal occlusion and classification of malocclusion, and analysis of orthodontic records and formulation of diagnosis.

Sp Qtr. 1 cl. Prereq: Dent 1st yr standing.

**655 Orthodontics P 1**

Interceptive orthodontic treatment in children; includes goals of early treatment of skeletal problems, crossbites, and problems arising during the mixed dentition phase.

Au Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**656 Orthodontics P 1**

Adjunctive and comprehensive orthodontic treatment in adults; biology and mechanics of tooth movement, preprosthetic treatment, surgical treatment, plus retention.

Wi Qtr. 1 cl. Prereq: Dent 2nd yr standing.

**657 Orthodontic Technique P 2**

Laboratory/clinical technique involving diagnostic, treatment planning, and biomechanical aspects of orthodontic care.

Sp Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

**658 Clinical Orthodontics I P 3**

Clinical orthodontic course entailing the provision of limited tooth movement.

Sp Qtr. Prereq: Dent 3rd yr standing. This course is graded S/U.

**659 Orthodontics P 1**

Prereq: Dent 4th yr standing.

**659.01 Orthodontic Literature Review**

Orthodontic clinical literature review.

Au Qtr. 1 cl. This course is offered in a sequence with 659.02.

**659.02 Orthodontic Case Presentation**

Students present completed orthodontic treatment cases in a seminar setting.

Wi Qtr. 1 cl. Offered in a sequence with 659.01, this is the final course of the series.

**661 Clinical Periodontology I P 1**

Clinic.

Au Qtr. 3 clinic hrs. Prereq: Dent 3rd yr standing. This course is offered in a series with 662 and 663. A 'P' mark as defined by the College of Dentistry may be used. This course is graded S/U.

**662 Clinical Periodontology II P 1**

A continuation of 661.

Wi Qtr. 3 clinic hrs. Prereq: Dent 3rd yr standing. This course is offered in a series with 661 and 663. A 'P' mark as defined by the College of Dentistry may be used. This course is graded S/U.

**663 Clinical Periodontology III P 1**

A continuation of 661 and 662.

Sp Qtr. 3 clinic hrs. Prereq: Dent 3rd yr standing. This course is offered in a series with 661 and 662. This is the final course of the series. A 'P' mark as defined by the College of Dentistry may be used. This course is graded S/U.

**664 Periodontology P 2**

Advanced treatment modalities for the management of periodontal diseases with emphasis on surgical corrective techniques; current developments in clinical periodontics.

Su Qtr. 2 cl. Prereq: Dent 3rd yr standing.

**668 Clinical Endodontics I P 1**

Clinic.

Wi Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing. This course is offered in a series with 669. A 'P' mark as defined by the College of Dentistry may be used.

**669 Clinical Endodontics II P 2**

A continuation of 668.

Sp Qtr. 4 clinic hrs. Prereq: Dent 3rd yr standing. This course is offered in a series with 668. This is the final course of the series. A 'P' mark as defined by the College of Dentistry may be used.

**672 Pharmacology P 1**

Review of autonomic pharmacology, psychopharmacology including antipsychotics and antidepressants, anti-Parkinson's therapy, and the principles, mechanisms, classifications, uses of antibiotic, and chemotherapeutic agents.

Au Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**684 Removable Complete Prosthodontics P 3**

Block assignment of integrated didactic, laboratory, and clinical removable prosthetic instruction. Laboratory competency examination of Dent III students' ability to provide complete prosthodontic treatment.

Su, Au, Wi Qtrs. 12 cl, 31 lab hrs, 24 clinic hrs. Prereq: Dent 3rd yr standing.

**686 Clinical Removable Prosthodontics P 2**

Clinical experience in removable prosthodontics.

Au Qtr. 4 clinic hrs. Prereq: Dent 3rd yr standing. A 'P' mark as defined by the College of Dentistry may be used.

**687 Clinical Removable Prosthodontics P 2**

Continuation of 686.

Wi Qtr. 4 clinic hrs. Prereq: Dent 3rd yr standing. A 'P' mark as defined by the college of Dentistry may be used.

**688 Clinical Removable Prosthodontics P 2**

Continuation of 687.

Sp Qtr. 4 clinic hrs. Prereq: Dent 3rd yr standing. A 'P' mark as defined by the college of Dentistry may be used. This is the final course of the series.

**693 Individual Studies in Dentistry P G 1-6**

Advanced studies in any of the recognized fields of dentistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Dent 3rd yr standing. Repeatable. This course is graded S/U.

**700 Special Problems P G 1-15**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Dent postgrad or grad standing. Repeatable.

**700.01 Advanced Oral Surgery and Anesthesia**

Diagnosis and treatment of surgical conditions of the teeth and contiguous structures; advanced techniques in surgery and local and general anesthesia.

**700.02 Advanced Orthodontics**

Applied osteology and myology in cephalometric roentgenographic interpretations; review of cephalic growth and development factors in normal occlusion; correction of malocclusions and dento-facial malformations.

**700.03 Advanced Periodontics**

Diagnosis and treatment of periodontal disease; correlation between the disease of the periodontium and probable systemic diseases, and management of diseases of a purely dental origin.

**700.04 Advanced Prosthodontics**

The diagnosis, treatment, and replacement of missing or lost teeth and parts of the mouth by prosthetic appliances; complete removable partial or fixed restorations.

**700.05 Advanced Oral Pathology and Diagnosis**

The interrelationships of gross microscopic and clinical pathology; current advances in the field of oral pathology and diagnosis.

**700.06 Advanced Endodontics**

The diagnosis of pulp and periapical diseases and their treatment by surgical and non-surgical techniques.

**700.07 Advanced Pedodontics**

Lectures, seminars, and clinical practice encompassing all phases of pedodontics and interceptive orthodontics.

**700.08 Advanced Dental Materials**

The science of dental materials.

**700.09 Advanced Oral Histology and Embryology**

The principles of histology and embryology applied to the structures in the oral region—their development, morphology, functions, and clinical relationships.

**700.10 Advanced Operative Dentistry**

Clinical problems in operative dentistry and their correlation with problems in related fields of dentistry; special emphasis on preventive dentistry.

**701 Advanced Clinical Oral Maxillofacial Surgery P 4**

Clinical experience in removal of teeth, biopsy, minor preprosthetic, and post operative patient care.

Su, Au, Wi Qtrs. 1 cl, 4 clinic hrs. Prereq: Dent 4th yr standing.

**704 Advanced Oral and Maxillofacial Surgery P 2**

Areas of oral and maxillofacial surgeries; dentofacial deformities; trauma; reconstructive surgery; cysts and tumors; TMJ; head and neck infections; and advanced dentoalveolar surgery techniques.

Au Qtr. 2 cl. Prereq: Dent 4th yr standing.

**708 Hospital Dentistry**

Define the role of the hospital in the treatment of dental patients and provide experience in the hospital so the dentist can contribute to total patient care.

Su, Au, Wi, Sp Qtrs. 1 week. Prereq: Dent 3rd yr standing.

**708.01 Lecture P G 1**

Hospital dental practice, hospital staff organization, privileges, medical records, patient evaluation, operating room, emergency room protocol, in-patient orders and care.

Au Qtr. 1 cl. Prereq: Dent 3rd yr standing.

**708.02 Clinic: University Hospital P 1**

In-patient and out-patient general anesthesia, operating room, emergency room, out-patient dentistry, clinics, hospital pathology service, medicine and surgery conferences, ward rounds, laboratory services, oral surgery rounds.

Su, Au, Wi, Sp Qtrs. 1 4-hr clinic. Prereq: 708.01.

**708.03 Clinic: Children's Hospital P 1**

Operating room, emergency room, out-patient dentistry, out-patient clinics, observation in general anesthesia, medical and surgical conferences, ward rounds, laboratory services.

Su, Au, Wi, Sp Qtrs. 1 4-hr clinic. Prereq: 708.01.

**720 Advanced Clinical Dentistry P 1-12**

Interdisciplinary orientation and direct guidance to clinical practice including clinical policies; procedures; time, patient, and treatment management through individual conferences, classroom presentations, and clinical practice.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Dent 4th yr standing. Repeatable to a maximum of 30 cr hrs.

**721 Dental Practice Administration P 3**

Practice management; business strategies; personnel topics; management systems; practice establishment; and finance, legal aspects, and behavioral aspects of dental practice.

Au Qtr. 3 cl. Prereq: Dent Sr standing.

**724 Clinical Preventive Dentistry P 1**

A continuation of 624.

Wi Qtr. 3 cl. Prereq: Dent 4th yr standing.

**730 Restorative Dentistry P 1**

Alternative and advanced prosthodontic procedures, such as intra-coronal and extra-coronal RPD attachments, magnetic resonance imaging, and maxillofacial prosthetic reconstruction.

Su Qtr. 1 cl. Prereq: Dent 4th yr standing.

**731 Clinical Restorative Dentistry P 4**

Clinical experience in single tooth and fixed partial denture therapy including diagnosis, prognosis, treatment planning, hard and soft tissue management, restoration, and recall procedures.

Su Qtr. 12 clinic hrs. Prereq: Dent 4th yr standing. This course is offered in a series with 732 and 733. A 'P' mark as defined by the College of Dentistry may be used.

**732 Clinical Restorative Dentistry P 4**

Continuation of 731.

Au Qtr. 6 clinic hrs. Prereq: Dent 4th yr standing. A 'P' mark as defined by the College of Dentistry may be used.

**733 Clinical Restorative Dentistry P 4**

Continuation of 732.

Wi Qtr. 12 clinic hrs. Prereq: Dent 4th yr standing. This is the final course of the series. A 'P' mark as defined by the College of Dentistry may be used.

**734 Clinical Restorative Dentistry P 2**

Clinical competency examinations; examinations of senior students' ability to perform efficient, high quality routine dentistry.

Wi Qtr. 2 hrs clinical. Prereq: Dent 4th yr standing.

**742 Oral Oncology P G 1**

Advanced study of the pathophysiology of neoplasia; and the detection, diagnosis and management of oral cancer.

Au Qtr. 1 cl. Prereq: Dent 4th yr standing.

**744 Clinical Oral Pathology P 2**

Review of common oral and paraoral diseases, with emphasis on clinical aspects, diagnosis, and management of various lesions.

Su Qtr. 1 2-hr cl. Prereq: Dent 4th yr standing.

**745 Clinical Oral and Physical Evaluation P 2**

Physical evaluation including medical history, vital signs, and physical exam of head, neck, and oral cavity.

Sp Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing. This course is graded S/U.

**747 Clinical Oral Radiology I P 1**

Wi Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing.

**748 Clinical Oral Radiology II P 1**

A continuation of 747.

Sp Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing.

**749 Clinical Oral Radiology III P 1**

A continuation of 748.

Su Qtr. 2 clinic hrs. Prereq: Dent 4th yr standing.

**751 Clinical Pediatric Dentistry P 1**

Clinical series with 752 and 753; course may include rotations at Coshocton Children's Clinic and/or Nisonger Center.

Su Qtr. 2 hrs clinic. Prereq: Dent 4th yr standing. A 'P' mark as defined by the College of Dentistry may be used.

**752 Clinical Pediatric Dentistry P 1**

Continuation of 751; course may include rotations at Coshocton Children's Clinic and/or Nisonger Center.

Au Qtr. 2 hrs clinic. Prereq: 751. A 'P' mark as defined by the College of Dentistry may be used.

**753 Clinical Pediatric Dentistry P 1**

Continuation of 752; course may include rotations at Coshocton Children's Clinic and/or Nisonger Center.

Wi Qtr. 2 hrs clinical. Prereq: 751 and 752. This is the final course in the series. A 'P' mark as defined in the College may be given.

**756 Orthodontics Treatment Planning Skills P 1**

Diagnosis and treatment-planning instruction/analysis to promote integration of pediatric dentistry, orthodontics, periodontics, and prosthodontics.

Su Qtr. 1 cl. Prereq: Dent 4th yr standing.

**758 Clinical Orthodontics II P 3**

Clinical orthodontic course entailing the provision of limited tooth movement.

Wi Qtr. 6 hrs clinical. Prereq: Dent 4th yr standing.

**761 Clinical Periodontology IV P 1**

Clinic.

Su Qtr. 2 clinic hrs. Prereq: Dent 4th yr standing. This course is offered in a series with 762 and 763. A 'P' mark as defined by the College of Dentistry may be used. This course is graded S/U.

**762 Clinical Periodontology V P 1**

A continuation of 761.

Au Qtr. 2 clinic hrs. Prereq: Dent 4th yr standing. This course is offered in a series with 761 and 763. A 'P' mark as defined by the College of Dentistry may be used. This course is graded S/U.

**763 Clinical Periodontology VI P 1**

A continuation of 761 and 762.

Wi Qtr. 2 clinic hrs. Prereq: Dent 4th yr standing. This course is offered in a series with 761 and 762. This is the final course of the series. A 'P' mark as defined by the College of Dentistry may be used. This course is graded S/U.

**768 Clinical Endodontics III P 2**

Clinic.

Au Qtr. 4 clinic hrs. Prereq: Dent 4th yr standing. This course is offered in a series with 769. A 'P' mark as defined by the College of Dentistry may be used.

**769 Clinical Endodontics IV P 1**

A continuation of 768.

Wi Qtr. 2 clinic hrs. Prereq: Dent 4th yr standing. This course is offered in a series with 768. This is the final course of the series. A 'P' mark as defined by the College of Dentistry may be used.

**771 Pharmacology P 1**

Pharmacology of drugs used primarily for medical conditions including cardiac glycosides, anti-arrhythmics, calcium channel blockers, anti-anginals, anti-hypertensives, anti-coagulants, anti-neoplastics, and gastrointestinal medications.

Su Qtr. 1 cl. Prereq: Dent 4th yr standing.

**778 Anxiety and Pain Control P 2**

Principles of anxiety control by sedative techniques with nitrous oxide-oxygen conscious sedation and with oral I.M. or I.V. light conscious sedation; methods of pre-operative assessment, monitoring, and management of complications; a review of light sedation, deep sedation, and general anesthesia.

Wi Qtr. 2 cl. Prereq: Dent 3rd yr standing.

**785 Removable Complete Prosthodontics P 2**

Clinical competency examination; examination of Dent IV students' ability to provide removable complete prosthodontic treatment.

Wi Qtr. 6 clinic hrs. Prereq: Dent 4th yr standing.

**786 Clinical Removable Prosthodontics P 2**

Clinical experience in removable prosthodontics.

Su Qtr. 4 clinic hrs. Prereq: Dent 4th yr standing. A "P" mark as defined by the College of Dentistry may be used.

**787 Clinical Removable Prosthodontics P 2**

Continuation of 786.

Au Qtr. 4 clinic hrs. Prereq: Dent 4th yr standing. A "P" mark as defined by the College of Dentistry may be used.

**788 Clinical Removable Prosthodontics P 2**

Continuation of 787.

Wi Qtr. 4 clinic hrs. Prereq: Dent 4th yr standing. This is the final course of the series.

**789 Experiential Education in Dentistry P 0**

Advanced clinical patient care.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Graduating 4th yr or other dental student with special permission. Repeatable. This course is graded S/U.

**790 Advanced Dental Topics or Problems P 1-6**

Lectures and discussions of current topics, laboratory or clinical participation in problems or investigation related to dentistry. Presented by faculty, guest lecturers or clinicians.

Au, Wi, Sp Qtrs. Arr. Prereq: Open only to dent students who meet college stated prereqs and who have permission of the college office and instructor. Maximum number of cr hrs course may be repeated varies with student's standing and according to criteria established by college. These courses are graded S/U.

- 790.01 Community Dentistry
- 790.02 Community Dentistry
- 790.03 Community Dentistry
- 790.04 Community Dentistry
- 790.05 Community Dentistry
- 790.06 Community Dentistry
- 790.07 Community Dentistry
- 790.08 Fixed Prosthodontics
- 790.09 Fixed Prosthodontics
- 790.10 Fixed Prosthodontics
- 790.11 Fixed Prosthodontics
- 790.12 Fixed Prosthodontics
- 790.13 Fixed Prosthodontics
- 790.14 Fixed Prosthodontics
- 790.15 Endodontics
- 790.16 Endodontics
- 790.17 Endodontics
- 790.18 Endodontics
- 790.19 Endodontics
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- 790.21 Endodontics
- 790.22 Operative Dentistry
- 790.23 Operative Dentistry
- 790.24 Operative Dentistry
- 790.25 Operative Dentistry
- 790.26 Operative Dentistry
- 790.27 Operative Dentistry
- 790.28 Operative Dentistry
- 790.29 Oral Biology
- 790.30 Oral Biology
- 790.31 Oral Biology
- 790.32 Oral Biology
- 790.33 Oral Biology
- 790.34 Oral Biology
- 790.35 Oral Biology
- 790.36 Oral Diagnosis and Medicine
- 790.37 Oral Diagnosis and Medicine
- 790.38 Oral Diagnosis and Medicine
- 790.39 Oral Diagnosis and Medicine
- 790.40 Oral Diagnosis and Medicine
- 790.41 Oral Diagnosis and Medicine
- 790.42 Oral Diagnosis and Medicine
- 790.43 Oral Surgery
- 790.44 Oral Surgery
- 790.45 Oral Surgery
- 790.46 Oral Surgery
- 790.47 Oral Surgery
- 790.48 Oral Surgery
- 790.49 Oral Surgery
- 790.50 Pediatric Dentistry
- 790.51 Pediatric Dentistry
- 790.52 Pediatric Dentistry
- 790.53 Pediatric Dentistry
- 790.54 Pediatric Dentistry
- 790.55 Pediatric Dentistry
- 790.56 Pediatric Dentistry
- 790.57 Periodontics
- 790.58 Periodontics
- 790.59 Periodontics
- 790.60 Periodontics
- 790.61 Periodontics
- 790.62 Periodontics
- 790.63 Periodontics

- 790.64 Removable Prosthodontics
- 790.65 Removable Prosthodontics
- 790.66 Removable Prosthodontics
- 790.67 Removable Prosthodontics
- 790.68 Removable Prosthodontics
- 790.69 Removable Prosthodontics
- 790.70 Removable Prosthodontics
- 790.71 Oral Radiology
- 790.72 Oral Radiology
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- 790.87 Orthodontics
- 790.88 Orthodontics
- 790.89 Orthodontics
- 790.90 Orthodontics
- 790.91 Orthodontics
- 790.92 Allied Topics
- 790.93 Allied Topics
- 790.94 Allied Topics
- 790.95 Allied Topics
- 790.96 Allied Topics
- 790.97 Allied Topics
- 790.98 Allied Topics
- 790.99 Research

**792 Special Lectures in Dentistry P G 1-5**

Lectures in special phases in dentistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable.

- 792.01 Oral Pathology  
General principles and concepts of pathology associated with the oral cavity.
- 792.02 Oral Pathology  
Local disturbances of the oral cavity.
- 792.03 Oral Pathology  
Systemic disturbances and their oral manifestations.
- 792.04 Dental Radiology  
Radiologic methods and diagnosis.
- 792.05 Oral Diagnosis  
Examination and diagnosis of oral disease.
- 792.06 Dental Therapeutics  
Principles of pharmacology in relation to patient care.
- 792.07 Physical Diagnosis  
Physical evaluation of the dental patient and its correlation with the required treatment.
- 792.08 Dental Epidemiology  
The principles of epidemiology in relation to dental health and disease.
- 792.12 Errors in Measurement  
Discussion of distribution functions as applied to random errors and the propagation of error.  
Su Qtr. 1 cl. Prereq: College algebra or equiv. Designed to acquaint MS candidates in dentistry with errors in physical research.
- 792.13 Oral Microbiology  
Discussion of oral and systemic diseases with oral manifestation of bacterial, viral, and immunologic etiology.  
Sp Qtr. 2 cl.
- 792.14 Behavioral Sciences in Dentistry  
A study of the psychological aspects of dental treatment involving the dentist, patients, and dental office staff.  
Repeatable to a maximum of 5 cr hrs.
- 792.15 Introduction to the Research Process  
Familiarization with scientific activity and statistics, examination of literature, library searches, and completion of a research outline.  
Su, Au, Wi Qtrs. Arr. Prereq: Dentists with grad standing or permission of course director.

**792.16 Principles of Mechanics for Orthodontists P G 4**

Study of basic mechanical principles including forces, moments, couples, displacements, rotations, equilibrium, stress-strain, and properties of orthodontic wires.

Wi Qtr. 2 4-hr cl, 2 hr lab. Prereq: Enrollment in grad orthodontics program. Open only to grad students in orthodontics.

**792.17 Gerontology for the Health Professions G 3**

Impact of the physiologic and socio-economic conditions associated with an aging society examined from the health professions perspective.

Au Qtr. 1 3-hr cl. Open to sr level students with permission of instructor.

**792.18 Research Topics in Oral Biology G 1**

Presentations by oral biology faculty on their own ongoing research projects.

Au Qtr. 1 cl. Prereq: Permission of instructor.

**793 Individual Studies P G 1-5**

Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable. These courses are graded S/U.

**793.01 Oral Surgery and Anesthesia****793.02 Orthodontics****793.03 Periodontics****793.04 Prosthodontics****793.05 Oral Pathology****793.06 Endodontics****793.07 Pedodontics****793.08 Operative Dentistry****793.09 Oral Diagnosis****793.10 Fixed Partial Prosthodontics****793.11 Oral Radiography****792.12 Oral Biology Laboratory Rotation**

Research activities and training in the laboratory of a program faculty member.

**794 Group Studies P G 3-5**

Group studies on special problems in each specialty of dentistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable.

**794.01 Oral Surgery and Anesthesia****794.02 Orthodontics****794.03 Periodontics****794.04 Prosthodontics****794.05 Oral Pathology****794.06 Endodontics****794.07 Pedodontics****794.08 Operative Dentistry****794.09 Oral Diagnosis****794.10 Fixed Partial Prosthodontics****794.11 Oral Radiography****795 Seminars in Dentistry P G 1-5**

Discussion of advances in dental science and review of original literature.

Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Dent grad standing.

**795.01 Oral Surgery and Anesthesia****795.02 Orthodontics****795.03 Periodontics****795.04 Prosthodontics****795.05 Oral Pathology****795.06 Endodontics****795.07 Pedodontics****795.08 Operative Dentistry****795.09 Oral Diagnosis****795.10 Fixed Partial Prosthodontics****795.11 Oral Radiography****796 Specialty Seminars in Dentistry P G 1-5**

Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable.

**796.01 Oral Surgery and Anesthesia****796.02 Orthodontics****796.03 Periodontics****796.04 Prosthodontics****796.05 Oral Pathology****796.06 Endodontics****796.07 Pedodontics****796.08 Operative Dentistry****796.09 Oral Diagnosis****796.10 Fixed Partial Prosthodontics****796.11 Oral Radiography****796.12 Oral Biology Seminar**

Student presentations of recent research findings, both original and from the literature.

Repeatable to a maximum of 2 cr hrs.

**798 Advanced Clinical Practice in Dentistry P 3-10**

Broad exposure to advanced principles and practices in each specialty of dentistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to maximum of 120 cr hrs.

**798.01 Oral Surgery and Anesthesia****798.02 Orthodontics****798.03 Periodontics****798.04 Prosthodontics****798.05 Oral Pathology****798.06 Endodontics****798.07 Pedodontics****798.08 Operative Dentistry****798.09 Oral Diagnosis****798.10 Fixed Partial Prosthodontics****798.11 Oral Radiography****884 Current Issues in Oral Biology G 3**

Overview of current areas of oral health research.

Su, Au, Wi, Sp Qtrs. 3 hrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course will cover multiple topics of current oral health concern.

**885 Histologic Laboratory Technique G 1-5**

The preparation of oral and dental tissues for microscopic study.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**886 Research Methods in Dentistry G 3-5**

A discussion on conceptual, methodological, and technical problems encountered in development of dental research projects.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**894 Group Studies G 3-5**

Advanced group studies in dentistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable.

**993 Individual Studies G 3-5**

Advanced individual studies in dentistry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

**999 Research in Dentistry G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Dutch

314 Cunz Hall, 1841 Millikin Road, 292-6985

**571\* Basic Dutch for Reading U G 5**

Fundamentals of grammar for reading purposes; applicable to students in humanities, sciences, social sciences, and professional schools.

Wi Qtr. 5 cl. Prereq: Grad standing or permission of instructor.

**572\* Dutch for Research U G 3**

Continuation of the principles learned in 571; applied readings in students' disciplines; emphasis on close translation, grammatical analysis, and vocabulary building.

Sp Qtr. 3 cl. Prereq: 571 or equiv or permission of instructor.

## East Asian Languages and Literatures

204 Cunz Hall 1841 Millikin Road, 292-5816

**131 East Asian Humanities U 5**

Introduction to the contemporary and traditional cultures of China, Korea, and Japan. Taught through readings, films, demonstrations, and discussions.

Su, Au, Wi, Sp Qtrs. 5 cl. BER/GEC/LAR course.



**151 Masterpieces of East Asian Literature in Translation U 5**

Highlights of Chinese, Japanese, and Korean literature; novels, stories, plays, and poetry from the world's longest continuous cultural tradition. Su, Au, Wi, Sp Qtrs. 5 cl. BER/LAC/LAR course.

**293 Individual Studies U 1-5**

Individual investigation of problems in East Asian cultures, languages, and literatures.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-10**

Special group studies course in some special area of East Asian language, literature, or culture.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 20 cr hrs.

**Women in East Asian and Asian-American Literature**

See Comp Std 314.

**323 The Buddhist Tradition U 5**

History and structure of Buddhism from founding to present in South, Southeast, and East Asia; emphasis on rituals, beliefs, and local and regional variations.

5 cl. Prereq: Comp Std 102.01, 102.02, 270, or Rel Stds 270 recommended. Not open to students with credit for Rel Stds 323. Cross-listed in Religious Studies.

**341 Thought in China and Japan U 5**

The shaping of two cultures; essentials of the major traditional schools of thought in China and Japan and their impact on society.

Sp Qtr. 5 cl. BER/GEC/LAR course.

**693 Individual Studies U G 1-5**

Individual investigation of East Asian cultures, languages, and literatures. Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701 Pedagogical Syntax for East Asian Languages U G 3**

Training in the presentation of grammar in East Asian language classes; special attention given to problems of translating linguistic studies into teachable units.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor.

**702 Materials Preparation for East Asian Languages U G 3**

Preparation of materials for teaching Chinese, Japanese, and Korean; emphasis on the special problems faced by English-speaking students in learning these languages.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor.

**850 Analytical Methods G 5**

Introduction to the literary and linguistic analysis of Chinese and Japanese texts.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Chinese or Japanese 800.

## East European Languages and Literatures

232 Cunz Hall, 1841 Millikin Road, 292-6733

**294 Group Studies U 1-5**

Topics related primarily to Albanian, Estonian, Hungarian, Latvian, and Lithuanian.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for each of the languages listed above.

**671 Grammar of Selected East European Languages U G 5**

Fundamentals of grammar as required for reading one of the following: Albanian, Estonian, Hungarian, Latvian, Lithuanian, or Romanian.

Wi Qtr. 5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 25 cr hrs; individual languages not repeatable.

**672 Reading of Selected East European Languages U G 5**

Reading of elementary and intermediate texts and translating into English one of the following: Albanian, Estonian, Hungarian, Latvian, Lithuanian, or Romanian.

Sp Qtr. 5 cl. Prereq: 671 (same language) or equiv, and permission of instructor. Repeatable to maximum of 25 cr hrs; individual languages not repeatable.

**693 Individual Studies U G 1-10**

Topics related primarily to Albanian, Estonian, Hungarian, Latvian, Lithuanian, and Romanian.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of chairperson. Repeatable to a maximum of 20 cr hrs, including cr hrs in 693.40. This course is graded S/U.

**694 Group Studies U G 1-10**

Topics related primarily to Albanian, Estonian, Hungarian, Latvian, Lithuanian, and Romanian.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for each of the languages listed above.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

## Economics

410 Arps Hall, 1945 North High Street, 292-6701

**100+ Introduction to Economics U 5**

Study of economic concepts basic to a wide range of social problems; application of these principles to understanding economic activity in firms, households, and the economy.

Su, Au, Wi, Sp Qtrs. 5 cl. Recommended as a foundation for further courses in economics. Not open to students with credit for 200 or Agr Econ 100. BER/LAC/LAR course. SS Admis Cond course.

**200 Principles of Microeconomics U 5**

Introduction to economic theory: supply and demand for goods and services; market structure; the distribution of income.

Su, Au, Wi, Sp Qtrs. 5 cl. H200 (honors) may be available to students enrolled in an honors program or by permission of dept. First required course for students planning to take 500-level courses in econ. BER/GEC/LAR course. SS Admis Cond course.

**206 Economics of the Ghetto U 5**

Interaction between economic problems and race problems in urban areas.

Wi Qtr. 5 cl. Prereq: 100 or equiv. Not open to students with credit for 206.02. BER/LAC/LAR course. SS Admis Cond course.

**294+ Group Studies U 1-5**

Current problems not covered in other courses; application of economic analysis of scarcity and choice of current policy significance.

5 cl. Prereq: 100 or 200 or equiv. Repeatable to a maximum of 10 cr hrs.

**367 Second Writing Course U 5**

2 2-hr cl or 4 1-hr cl. Prereq: 200 and 400, or equivs. GEC/LAR courses.

**367.01 The American Economy in the 20th Century**

Survey of major economic developments in the American economy during the 20th century.

Au, Sp Qtrs.

**367.02 Current Economic Issues in the United States**

Study of problems currently facing the U.S. economy.

Au, Wi Qtrs.

**367.03 War and Economics: The American Experience**

Study of the ways that war affects and is affected by the economic problem of allocating scarce resources.

Sp Qtr.

**400 Principles of Macroeconomics U 5**

Theory of national income determination; economic fluctuations; money; government policy; international economics.

Su, Sp Qtrs. 5 cl. H400 (honors) may be available to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course.

**442+ Elementary Economic Statistics U 5**

Descriptive statistics, discrete probability, Bayes law, random variables, sampling distributions.

Au Qtr. 3 cl, 2 1-hr labs. Prereq: 10 cr hrs in math above the level of 104.

**444 Elementary Econometrics U 5**

Basic methods of data analysis used in economics, including descriptive statistics, hypothesis testing, and regression analysis.

Au, Wi, Sp Qtrs. 4 1-hr cl, or 2 2-hr cl. Prereq: 10 cr hrs of math above 104 and Stat 145 or equiv.

**500+ Evolution of Economic Thought U G 5**

Critical analysis of ideas of great economists, factors which influenced those ideas; their impact upon social and economic development of the modern world.

4 cl. Prereq: 200 and 400, or equivs.

**501 Intermediate Microeconomic Theory U G 5**

Theory of consumer behavior; theory of the firm; costs and production; factor price determination; general equilibrium.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 200 and 400, or equivs.

A—Designates a version which requires Math 132 or equiv or permission of instructor.

**502 Intermediate Macroeconomic Theory U G 5**

Analysis of the determinants of national output, income and employment levels; theory of economic growth and progressive equilibrium in an economy.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 200 and 400, or equivs.

A—Designates a version which requires Math 132 or equiv or permission of instructor.

**508\* Comparative Economic Systems U G 5**

Principles and institutions for economic decision making under capitalism, socialism, communism, and mixed systems; comparison of selected countries.

4 cl. Prereq: 200 and 400, or equivs. Not open to students with credit for 690.

**512 General Economic History U G 5**

Evolving institutional changes fundamental to Western development; analysis of the rise of nation-state, commercial and industrial development, and evolution of a market economy.

Au, Wi, Sp Qtrs. 4 cl. Prereq: 200 and 400, or equivs.

**515 World Economic Development in Historical Perspective I U G 5**

First course in a survey of economic development from the middle ages through the 20th century.

Au, Wi, Sp Qtrs. 2 2-hr or 4 1-hr cl. Prereq: 200 and 400, or equivs. BER/GEC/LAR course.

**516 World Economic Development in Historical Perspective II U G 5**

Second course in a survey of economic development from the middle ages through the 20th century.

Au, Wi, Sp Qtrs. 2 2-hr or 4 1-hr cl. Prereq: 515. BER/GEC/LAR course.

**520 Money and Banking U G 5**

Organization, operation, and economic significance of our monetary and banking system; special reference to current conditions and problems.

Su, Au, Wi, Sp Qtrs. 4 cl. H520 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 200 and 400, or equivs.

**530 Government Finance in the American Economy U G 5**

Analysis of fiscal institutions and decision making in the public sector of the American economy; budget planning and execution; taxation, debt, and fiscal policy.

Su, Au, Wi, Sp Qtrs. 4 cl. H530 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 200 and 400, or equivs.

**532† Public Expenditure and Cost-Benefit Analysis U G 5**

Economics of public choice, public goods, non-market allocations, collective decision-making, and net-benefit maximization; case studies.

4 cl. Prereq: 200 and 400, or equivs.

**550† Economic Development U G 5**

Empirical and theoretical consideration of long-term economic changes, including changes in industrial structure, technology, and level of national product; emphasis on developing economics.

4 cl. Prereq: 200 and 400, or equivs. Not open to students with credit for 610 or 650.

**553† Population U G 5**

Techniques of population analysis; the demographic transition and economic theories of population; impact of population change both in the Third World and in industrialized nations.

4 cl. Prereq: 200 and 400, or equivs.

**554† Economics of Energy U G 5**

Energy, economic growth, and stabilization; comparison among world regions, with special reference to the role played by international oil markets.

5 cl. Prereq: 200 and 400, or equivs; History 111 and 112, or 131 and 132, or 151 and 152, or 171 and 172; and 5 or hrs in social and behavioral sciences. Not open to students with credit for 671. LAR course.

**558\* Area Studies in Economic Development U G 5**

Regional analysis of economic conditions; measurement and interpretation of economic growth; national development strategies and resource utilization; inter-regional cooperation and international economic relations.

4 cl. Prereq: 200 and 400, or equivs.

**558.04 The Soviet Union and Eastern Europe**

Not open to students with credit for 559.

**560 International Economic Relations U G 5**

Survey of international economic relations; the basis of world trade; commercial and financial policy, particularly of the United States; and recent international economic organization.

Wi, Sp Qtrs. 4 cl. Prereq: 200 and 400, or equivs. Not recommended for students who plan to take 665 and 666.

**570 Government and Business U G 5**

Economic and legal aspects of government regulation of business in the United States; philosophies and concepts of public control; contemporary problems.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 200 and 400, or equivs.

**580 Labor Economics and Industrial Relations U G 5**

Survey of the field of labor economics; trade unionism, collective bargaining; wage determination, employment, unemployment; labor legislation.

Au, Wi, Sp Qtrs. 4 cl. H580 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 200 and 400, or equivs.

**590† Urban Economics U G 5**

Analysis of urban spatial structure utilizing the techniques of economics; detailed studies of urban problems concerning housing, congestion, air pollution, local public finance, zoning, and city size.

4 cl. Prereq: 200 and 400, or equivs. Not open to students with credit for 206 or 694.07.

**591† Economics of Environmental Quality U G 5**

Economic analysis of the relationships among natural resources, growth, pollution control, congestion, and social institutions.

4 cl. Prereq: 200 and 400, or equivs. Offered in cooperation with Natural Resources.

**H596† Honors Seminar in Economics U 2 or 3**

Presentations by selected faculty of economic topics and issues of current interest; discussion of research problems and methods.

1 2-hr cl. Prereq: Honors program enrollment or permission of instructor.

**600 Applications of Mathematics in Economic Analysis U G 5**

Coverage of the most common applications of mathematics to economic analysis and econometrics; the necessary tools from matrix algebra and calculus.

Au Qtr. 5 cl. Prereq: Math 152 or equiv and permission of instructor.

**613 Economic History of the United States U G 5**

General survey from discovery of America to present; European economic background; westward movement and its effects; development of economic institutions in the United States.

Wi Qtr. 4 cl. Prereq: 444, 501, and 502; or grad standing.

**614\* Economic History of Western Europe U G 5**

Survey from 1750 through the post-World War II period; from Britain in the West to Russia in the East.

Wi Qtr. 4 cl. Prereq: 444, 501, and 502; or grad standing.

**625 National and International Money Markets U G 5**

Organization, functions, and control of money markets and their submarkets; flow of funds in these markets and investment policies of market participants.

Au Qtr. 4 cl. Prereq: 444, 501, and 520.

**631 Federal Finance and Fiscal Policy U G 3**

The economics of government spending and taxation; analysis of the fiscal role and instruments of government and their effects on the economy.

4 cl. Prereq: 444 and 530, or equivs. Not open to students with credit for PubPol&M 631. Cross-listed in Public Policy and Management.

**633 State and Local Government Finance U G 3**

Economic analysis of revenues and expenditures of state and local governments; vertical and horizontal relationships between agencies and units; specific problems in these areas.

Au Qtr. 4 cl. Prereq: 444 and 530, or equivs. Not open to students with credit for PubPol&M 633. Cross-listed in Public Policy and Management.

**640 Probability Theory U G 5**

Probability, random variables, Markov chains, discrete and continuous distributions, transformations, moment generating function techniques, limit theorems, expectation, variance.

Au Qtr. 4 cl. Prereq: Math 153 or equiv. Not open to students with credit for Stat 520 or 620.

**641 Applied Regression and Correlation Analysis U G 5**

The general linear regression model; multiple correlation, path analysis, analysis of variance and tests of significance; specification errors.

Wi Qtr. 4 cl. Prereq: 200 and 400, or equivs.

**642 Applied Economic Models and Forecasting U G 5**

Application of economic and statistical principles to economic problems; applications include topics in labor economics, industrial organization, macro models, and international trade.

Sp Qtr. 4 cl. Prereq: 501, 502, 641, and Math 132; or equivs.

**650† Economic Development: Issues and Policies U G 5**

Historical and stage theories of underdevelopment; sources and patterns of growth and development; problems of demography, unbalanced growth, agriculture, and industry; foreign trade and regional development.

4 cl. Prereq: 444 and 501, or equivs. Not open to students with credit for 652.

**651† Latin American Economic Development U G 5**

Economic analysis of development strategies and of trade, financial, price, and other policies in a Latin American context.

4 cl. Prereq: 200, 400, and 444; or equivs. Not open to students with credit for 558 or 558.01.

**665 International Commodity Flows: Theory and Policy U G 5**

Comparative advantage and the gains from trade; tariffs and other trade restrictions; economic effects of protective policies; U.S. commercial policies; regional economic integration.

Wi Qtr. 4 cl. Prereq: 444 and 501.

**666 Financial Aspects of International Trade U G 5**

International payments and receipts; foreign exchange markets; balance-of-payments adjustment under different monetary systems; macroeconomic policy; international monetary reforms; foreign investments; multinational corporations.

Sp Qtr. 4 cl. Prereq: 444 and 502.

**670 Structure of Industry U G 5**

Nature, role, and regulation of competition; market structure and social performance; antitrust laws; current economic, legal, and policy problems in the antitrust area.

Au Qtr. 4 cl. Prereq: 444 and 501, or grad standing.

**672† Economic Analysis of Japanese Firms and Markets U G 5**

Applications of economic analysis to Japanese industrial organization including the firm's internal incentive structure, labor markets, and financial institutions.

Sp Qtr. 4 cl. Prereq: 200, 400, and 444; or equivs. 501 recommended.

**693 Individual Studies U G 1-5**

Advanced readings in economics and related fields.

Su, Au, Wi, Sp Qtrs. Prereq for jrs: An average of B or better in all econ courses taken and a CPHR of 3.00 or above. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 3-5**

Advanced courses in economics and related fields.

Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Advanced Mathematical Techniques in Economics G 5**

Advanced mathematical analysis of economics problems; topics to include basic set theory and real analysis; optimization subject to inequality constraints and dynamic optimization.

Wi Qtr. 2 1/3-hr cl. Prereq: 600 or equiv. Not open to students with credit for this topic under 894.

**705† Microeconomic Theory Survey U G 4**

Theory of consumer behavior; theory of the firm; costs and production; factor price determination; general equilibrium.

Au Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 501.

**706† Macroeconomic Theory Survey U G 4**

Analysis of the determinants of the national output; income and employment levels; theory of economic growth and progressive equilibrium in an economy.

Wi Qtr. 4 cl. H706 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Grad standing or permission of instructor. Not open to students with credit for 502.

**717† Economics of Socialism G 5**

Survey of socialist thought and movements; relations of socialist thought to the theory and practice of socialist economics; planning, allocation, pricing, and controls.

Wi Qtr. 4 cl. Prereq: 501 and 502, or 705 and 706, or grad standing.

**718† Economic Analysis of the Soviet Union and Eastern Europe G 5**

Analysis of the pattern of economic growth and theory, and practice of economic planning in the Soviet Union and Eastern Europe; comparison with Communist China.

Au Qtr. 4 cl. Prereq: 501 and 502, or 705 and 706, or grad standing.

**730 Public Finance G 5**

Comprehensive survey and analysis of the principal fiscal activities of contemporary governments; logic of public sector activity, taxation principles and practice, intergovernmental relations, current fiscal problems.

Wi Qtr. 4 cl. Prereq: 705 and grad standing, or permission of instructor. Not open to students with credit for 530 or PubPol&M 730. Cross-listed in Public Policy and Management.

**740 Inference and Decision Analysis under Uncertainty G 5**

Distribution theory, point and interval estimation, statistical hypothesis testing, decision analysis under uncertainty.

Wi Qtr. 4 cl. Prereq: 640 or equiv.

**741 General Linear Regression Analysis G 5**

Multiple regression analysis; the general linear model; non-linear and distributed lag models.

Sp Qtr. 4 cl. Prereq: 600 and 740, or Stat 521.

**742 Econometrics G 5**

Review of the general linear model; identification; estimating criteria; single and simultaneous equation estimation; econometric application.

Au, Sp Qtrs. 4 cl. Prereq: 741.

**H783 Honors Research U 3-5**

A program of study arranged for each student, with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the econ courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree *with distinction* in econ. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**790 Urban Economics G 5**

Application of economic theory to urban problems; topics include slums, residential segregation, intracity location of economic activity, urban renewal, urban sprawl, transportation, and governmental organization.

Sp Qtr. 4 cl. Prereq: 705, Geog 650, and grad standing; or permission of instructor.

**802† History of Economic Thought G 5**

A survey of economic thought with emphasis on the period from Adam Smith to the present.

**804 Microeconomic Theory I G 5**

Theories of consumers and producers.

Au Qtr. Prereq: 501A or equiv.

**805 Microeconomic Theory II G 5**

Classical partial equilibrium (competition, monopoly, monopolistic competition, Cournot and Bertrand oligopoly models, location models) and general equilibrium theory.

Wi Qtr. Prereq: 600 and 804.

**806 Macroeconomic Theory I G 5**

Theory of income and employment; Keynesian aggregate supply and demand; consumption, saving, and the multiplier; determinants of investment and the accelerator; government's role.

Au Qtr. Prereq: 502A or equiv.

**807 Macroeconomic Theory II G 5**

Aggregate supply: expectations, introduction to dynamic macroeconomic models.

Wi Qtr. Prereq: 600, 804, and 806. Not open to students with credit for 809.01.

**808 Microeconomic Theory III G 5**

Partial equilibrium welfare theory; economic dynamics; economics of information and uncertainty; and elementary game theory; may also include topics in industrial organization, labor, public finance, and others.

Sp Qtr. Prereq: 805.

**809 Macroeconomic Theory III G 5**

Stochastic dynamic problems in macroeconomics; questions of growth, business cycles, and policy.

Sp Qtr. Prereq: 807. Not open to students with credit for 809.02.

**810† General Equilibrium Theory G 5**

Analysis is developed relevant to the simultaneous study of markets for all commodities and for all factors of production.

Wi Qtr. 2 1/2-hr cl. Prereq: 808. Not open to students with credit for this topic under 894.

**811 Applied Macroeconomics G 5**

Application of econometric methods to theoretical structures developed in 806 and 809; estimation and validation of macroeconomic models.

Sp Qtr. 2 2<sup>3</sup>/<sub>4</sub>-hr cl. Prereq: 742 and 809, or permission of instructor.

**812 Economic Development in Historical Perspective G 5**

Survey of the history of industrialization from the Industrial Revolution in Great Britain through the present; economic growth models and development issues.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in econ or permission of instructor.

**815\* Mathematical Economics I G 5**

Mathematical analysis of microeconomic problems including consumer and production theory and general equilibrium.

Wi Qtr. Prereq: 808.

**816\* Mathematical Economics II G 5**

Mathematical analysis of macroeconomic problems including static and dynamic systems and optimal control.

Sp Qtr. Prereq: 809.

**820 Monetary Theory G 5**

Role of money in theoretical analysis of forces determining and influencing level of income, employment, and prices.

Au Qtr. Prereq: 520, 805, and 806; or equivalents.

**821† Bank Structure and Regulation G 5**

Relation of bank regulation and supervision to composition of banking industry; impact of differing banking structures on economic growth and stability; proposals for structural changes.

Wi Qtr. Prereq: 520, 805, and 806; or equivalents.

**830 Advanced Public Finance I G 5**

A theoretical and empirical investigation of the economic behavior of the public sector; theory of social goods, problems of tax structure, incidence, multi-unit finance.

Au Qtr. Prereq: 805.

**832 Advanced Public Finance II G 5**

Continuation of 830; topics include intergovernmental relations, tax incidence, and tax reform.

Wi Qtr. Prereq: 830.

**840 Time-Series Econometrics G 5**

Fundamental elements of time series methods; recently developed techniques for the analysis of economic time series.

Au Qtr. 2 2-hr cl. Prereq: 742.

**842 Advanced Econometrics G 5**

Theory and application of advanced quantitative research methods; computerized application of econometric methods developed in 742.

Wi Qtr. Prereq: 742.

**844† General Managerial Economics G 3**

MBA core course in microeconomics; production and consumer theory, market forms, welfare, distribution, general equilibrium, and capital theory. 2 1<sup>1</sup>/<sub>2</sub>-hr cl. Prereq: 200 or equiv, and differential and integral calculus. Not open to students in the structured MBA.

**850 Advanced Economic Development G 5**

Survey of theoretical models and methods used in economic development and planning; theories of dualistic and demographic development; inter-industry and sector models.

Wi Qtr. Prereq: 650, 705, and 706.

**861 Advanced Microeconomic Trade Theory G 5**

Advanced nonmonetary international trade theory; analysis of the effect of trade and commercial policies on the allocation of resources, income distribution, and growth.

Sp Qtr. 4 cl. Prereq: 805.

**862 Advanced Macroeconomic Trade Theory G 5**

Advanced monetary international trade theory; analysis of payments adjustments under alternative international monetary institutions.

Wi Qtr. Prereq: 805 and 806; 861 recommended.

**871\* Industrial Organization I G 5**

An investigation of information economics and market-based transactions in the theory of the firm.

Au Qtr. 2 2-hr cl. Prereq: 808.

**872\* Industrial Organization II G 5**

Economic analysis of industry structure, conduct, performance, and related issues of public policy.

Wi Qtr. Prereq: 808 and 871.

**883\* Advanced Labor Economics I G 5**

The firm as production function, employment contracting in a competitive market, and collective action (labor unions and employment contracting).

Au Qtr. Prereq: 805 and 806.

**884\* Advanced Economics of the Labor Market G 5**

Economic theory and empirical evidence relating to labor allocation and wage determination.

Wi Qtr. Prereq: 805 and 806.

**895† Managerial Economics G 4**

Introduction to microeconomic theory of demand and supply, including cost and production functions; applications for management decision making and government regulation.

Au Qtr. 2 2-hr cl. Prereq: Enrollment in structured MBA.

**896† Business Conditions Analysis G 4**

Analysis of general economic conditions and their relation to decisions of the firm; economic forecasting models and methods for decision support and strategic planning.

Au Qtr. 2 2-hr cl. Prereq: Enrollment in structured MBA.

**899 Indepartmental Seminars G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

Repeatable by permission.

**915 Seminar in Price Theory G 5**

Special topics in economic theory.

Au, Sp Qtrs. Prereq: 808 and 809. Repeatable to a maximum of 20 cr hrs.

**918† Seminar in Economic Problems of the Soviet Union and Eastern Europe G 5**

Selected research topics.

Prereq: 717 and 718. Repeatable to a maximum of 10 cr hrs.

**920 Seminar in Monetary Policy G 5**

Application of monetary theory to issues of public policy in banking and monetary affairs; examination of public hearings and policy literature.

Au, Sp Qtrs. Prereq: 820 and 821. Repeatable to a maximum of 20 cr hrs.

**930\* Seminar in Government Finance G 5**

Analysis of theoretical and applied aspects of fiscal economics in the American and foreign economies; selected topics of current and permanent importance.

Prereq: 631 and 632. Repeatable to a maximum of 10 cr hrs.

**940 Seminar in Econometrics G 5**

Examination of economic problems whose solutions may advantageously be sought by use of the methods of mathematics and mathematical statistics.

Sp Qtr. Prereq: 742 and 842 or equiv or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**950† Seminar in Economic Development and Planning G 5**

Selected topics in the process of economic development and in planning for development; analysis and evaluation of planning methodologies, strategies, and systems.

Prereq: 650 and 850, or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**960† Seminar in International Economic Problems G 5**

Seminar in analytical problems, theoretical and applied, of international economic adjustments; development of techniques for implementation of policies.

Prereq: 861. Repeatable to a maximum of 10 cr hrs.

**970 Seminar in Structure and Regulation of Industry G 5**

Economic bases for government participation in business activities: antitrust, regulation, and collective decision making.

Au, Sp Qtrs. Prereq: 872. Repeatable to a maximum of 20 cr hrs.

**981\* Seminar in the Economics of the Labor Market G 5**

Selected topics and issues in wage determination, employment, and unemployment.

Sp Qtr. Prereq: 884. Repeatable to a maximum of 10 cr hrs.

**995† Research Seminars G 3-5**

Intensive study of problems in the graduate fields of specialization.

Su, Au, Wi, Sp Qtrs. Prereq: 75 hrs of grad credit; completion of core courses in decimal subdivision or permission of seminar director. Each decimal subdivision repeatable to a maximum of 30 cr hrs. These courses are graded S/U.

995.01 Economic Theory and Mathematical Economics

995.02 Econometrics

995.03 Money, Banking, and Monetary Policy

995.04 Labor Economics

995.05 Structure and Regulation of Industry

995.06 Government Finance and Expenditure

995.07 Urban Economics

995.08 Transportation Economics

995.09 Economic Development and Development Planning

995.10 Soviet and Eastern European Economy

995.11 International Economics

995.12 Economic History

**998 Research in Economics: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Economics: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Education

110 Arps Hall, 1945 North High Street, 292-2581

**692 Workshop U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**727 Special Topics in Education P G 1-5**

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or registration in one of the professional schools. Repeatable. This course is graded S/U.

## Educational Policy and Leadership

121 Ramseyer Hall, 29 West Woodruff Avenue, 292-5181

**Special Topics in Education** (Ed-P&L 727) may be offered by any of the program areas listed below.

**727 Special Topics in Education P G 1-5**

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or registration in one of the professional schools. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

727.32 Higher Education

727.33 Adult Education

727.35 Higher Education Administration

727.40 History of Education and Comparative Education

727.41 Philosophy of Education

727.43 Interactive Technologies

727.46 Instructional Design

727.48 Educational Development

727.49 Curriculum, Instruction, and Professional Development

## Curriculum, Instruction, and Professional Development

121 Ramseyer Hall, 29 West Woodruff Avenue, 292-5181

**615 Developing Discipline for Effective Learning U G 3-5**

Causes of and procedures for dealing with school discipline problems; focus upon the teacher, student, classroom, and school situations.

Au Qtr. 1 2½-hr cl, arranged practicum. Prereq: teaching experience or enrolled in student teaching.

**692 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

**694 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

694.48 Educational Development

694.49 Curriculum and Instruction

694.51 Educational Change

This course is graded S/U.

**718 Pedagogical Studies G 3**

Key research studies and major perspectives on classroom pedagogy including effective classroom management, teaching and learning, and school functioning.

Au Qtr. 1 2½-hr cl. Prereq: Ed-T&P 702 and 704. Open to students enrolled in the MEd program.

**726 Educational Change U G 3 or 5**

Commonly used strategies for changing people and organizations are studied; the strategies vary from collaborative problem solving to the coercive use of violence and non-violence.

Su Qtr. 1 3-hr cl.

**800 Qualitative Research in Education G 3**

Issues and problems of scientific inquiry in educational research with emphasis on field research.

Au, Wi Qtrs. 1 3-hr cl.

**814 Historical Bases of Curriculum Development G 3**

Intensive analysis of the outstanding contributions made by scholars in the field from 1900 to 1960.

Wi Qtr. Prereq: 860.

**817 Language of Teaching G 3**

Exploration of the construction of life in classrooms through the face-to-face interactions of teacher and students, how language influences what students learn, and how the language students bring to the instructional situation leads to evaluations of their competence.

Sp Qtr. 1 2½-hr cl.

**818 Contemporary Perspectives on Instruction G 3**

Overview of the research basis of classroom instruction, both historical and contemporary; the conceptual framework used, the paradigm used, questions explored, variables studied, and findings will be examined.

Au Qtr. 1 2½-hr cl.

**825 Theories and Educational Practices of Nonverbal Communication G 3**

Investigation of theoretical and practical consequences of nonverbal communication for teaching and learning; exploration of research possibilities.

Sp Qtr. 1 2½-hr cl.

**841 Curriculum in Higher Education G 3**

A study of representative and experimental college programs in the United States.

Wi Qtr. 1 2½-hr cl.

**851 College Teaching G 3**

Designed as initial preparation for instruction at the college level; focuses on the generic skills, strategies, and issues common to university teaching.

Au Qtr. 1 2½-hr cl. Open to grad students committed to teaching in any area at the college level. This course is graded S/U.

**856 Observing Classroom Instruction G 3**

Exploration of different approaches used to observe the nature of instruction in classrooms and other educational settings; examines theoretical bases and assumptions.

Wi Qtr. 1 2½-hr cl.

**857 Individualizing Instruction G 3**

A study of theory, practice, and materials related to individualizing instruction.

Su, Au, Sp Qtrs. 1 2½-hr cl.

**859 Junior High School Curriculum G 3**

A study of various types of junior high school programs, with special emphasis upon teaching-learning procedures as they apply to the early adolescent years.

Su, Wi Qtrs. 1 2½-hr cl. Prereq: Ed-T&P 451.

**860 Fundamentals of Curriculum G 3**

Designed to serve as an overview of the field of curriculum and instruction; kindergarten through 12th grade.

Su, Au, Wi, Sp Qtrs. 1 2½-hr cl.

**863 An Interpretive History of African-American Education: 1700-1950 G 3**

Designed to give students an understanding of the education an African-Americans from the perspective of African-American scholars.

Sp Qtr. 1 2½-hr cl.

**864 Fundamentals of Instruction G 3**

Survey of instructional theory and related behavioral science disciplines; emphasis is on application of principles of instructional theory to classroom teaching.

Su, Au, Sp Qtrs. 1 2½-hr cl. Prereq: Ed-T&P 585 or secondary (587) student teaching or equiv.

**865 Curriculum Theory G 3**

Advanced study of curriculum; kindergarten through the 12th grade.

Au, Sp Qtrs. 2 1½-hr cl. Prereq: 860 or equiv.

**868 Laboratory in Curriculum Development G 3**

Advanced study of techniques of curriculum development and organization; specific problems in curriculum development which are of concern to the students enrolled.

Wi Qtr. 1 2½-hr cl. Prereq: 862 or equiv.

**869 Instructional Theory G 3**

Advanced study dealing with theoretical conceptions, basic principles, and generalized techniques involved in developing, executing, and evaluating instructional activities.

Wi Qtr. 1 2½-hr cl. Prereq: Permission of instructor.

**870 Practicum in Curriculum, Instruction, and Supervision G 3**

A study of the literature and methods of curriculum, instruction, and supervision in a field setting, with emphasis on instruction.

Wi Qtr. 1 cl, lab arr. Prereq: Master's degree and 861.

**871 Practicum in Curriculum, Instruction, and Supervision G 3**

A study of the literature and methods of curriculum, instruction, and supervision in a field setting, with emphasis on supervision.

Wi Qtr. 1 cl, lab arr. Prereq: 860 or 861 or 864 and master's degree.

**872 Practicum in Curriculum, Instruction, and Supervision G 3**

A study of the literature and methods of curriculum, instruction, and supervision in a field setting, with emphasis on curriculum.

Sp Qtr. 1 cl, lab arr. Prereq: 860 or 861; and master's degree.

**873 Problems of Secondary School Supervision and Curriculum Development G 3**

Supervision and curriculum development emphasizing problems involved in initiating and conducting change in the secondary school curriculum.

Sp Qtr. 1 2½-hr cl. Prereq: 860.

**884 Planned Field Experience G 3-15**

Planned professional teaching experience in a public school or other educational agency under supervision.

Prereq: Written permission of area adviser. Repeatable to a maximum of 15 cr hrs. These courses are graded S/U.

**890 Action Research to Understand and Improve Educational Practices G 3**

Action research is inquiry aimed at becoming a more astute practitioner by collecting and analyzing data about an aspect of concern about one's practice.

Su, Sp Qtrs. 1 2½-hr cl. Permission of instructor needed for PhD students.

**894 Group Studies G 1-5**

Advanced group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**894.49 Curriculum and Instruction****899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

**925 Seminars G 2-5**

Prereq: Written permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Research problems in:

**925.45 Emergent Research in Educational Technology**

An exploration, evaluation, and discussion of emergent research and technology for the purpose of encouraging the growth of individual scholarship and a sense of community.

Arr. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

**925.48 Educational Development**

This course is graded S/U.

**925.49 Curriculum and Instruction****966 Practicum in Educational Research and Evaluation G 3**

The utilization of research strategies and evaluation techniques in studying educational problems with emphasis upon the development, conduct, and completion on individual projects.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Previous courses in the basic sequence in educational research or evaluation or permission of instructor. Not open to students with credit for Ed-T&P 966 or Ed-T&P 966. Cross-listed in Educational Theory and Practice.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**999.48 Educational Development****999.49 Curriculum and Instruction****999.51 Educational Change****Educational Administration**

301 Ramseyer Hall, 29 West Woodruff Avenue, 292-7700

**692 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

**692.44 Workshop: Educational Administration and Supervision****693 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Ed-T&P 45 or Ed-T&P 460, and written permission of instructor. A total of not more than 30 cr hrs in individual study (any 693) will apply toward graduation for undergrad students, 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. These courses are graded S/U.

**693.35 Higher Education Administration****693.44 Individual Studies: Educational Administration and Supervision****694 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**694.35 Higher Education Administration****694.44 Group Studies: Educational Administration and Supervision****806 Administration of Higher Education G 3**

Purposes and scope of higher education; governance; problems of administration-student-staff relationships; and administrative organization. Sagaria.

Su, Au, Wi, Sp Qtrs. 1 2½-hr cl or 2 1½-hr cl. Not open to students with credit for Ed-Admin 800.

**810 Understanding Educational Organizations: Insights from Organizational Theory G 3**

An introductory survey of the applications of formal organization theory for the purpose of understanding educational organizations—a core course in administrator certification.

Su, Wi, Sp Qtrs. 1 2½-hr cl or 2 1½-hr cl. Certification students must also enroll for 1 hr in 884B44.

**815 The Community College G 3**

History of community colleges; evaluation of organization and administration; campus planning; and federal, state, and local governmental relations with these colleges.

Au Qtr. 1 2½-hr cl.

**820 Financing Higher Education G 3**

A study of financing higher education with emphasis on issues affecting higher education; criteria for identifying and developing sources of financial support for institutions of higher education.

Wi Qtr. 1 2½-hr cl or 2 1½-hr cl. Prereq: 806 or 815.

**835 Personnel Administration in Higher Education G 3**

A study of the staff personnel function in institutions of higher education through a consideration of personnel policies and operating principles. Young.

**840 Legal Aspects of Higher Education Administration G 3**

Statutory and case law are analyzed for administrative implications; changing legal developments in college and university governance patterns. Wi Qtr. Prereq: 806 or 814.

**842 Administration of Academic Affairs in Higher Education G 3**

Principles and problems of administering academic affairs in light of development, financial considerations, and evaluation. Sagaria. Au Qtr. 1 2 1/2-hr cl or 2 1 1/2-hr cl. Prereq: 806.

**843 Administrative Responsibilities and Perspectives: Equity, Learning, and the Individual G 3**

Administrators' responsibility to see equity and the rights of individual are recognized and enhanced in the school setting. Au, Wi, Sp Qtrs. 1 2 1/2-hr cl. Prereq: 846 or permission of instructor. Mandated requirement for the Certification of Administrators in the State of Ohio.

**844 The Educational Leader as Learner: Knowledge and Administration G 3**

Designed to increase the educational administrator's ability to accept and use the notion that human beings believe differently (alternative ideologies) and learn differently (alternate epistemologies). Au Qtr. 1 2 1/2-hr cl.

**845 Politics and Political Leadership in American Education G 3**

A critical examination of national, state, and local politics and political leadership in American education. Su, Au, Wi, Sp Qtrs. 2 1/2-hr cl. Certification students must also enroll for 1 hr of 884A44.

**846 Introduction to Educational Administration G 3**

Introduction to the organizational setting of the school, the nature of administration, and personal decision making about careers in educational administration—a core course in administrator certification. Su, Au, Wi, Sp Qtrs.

**847 Human Relations in Educational Administration G 3**

Interpersonal behavior in educational organizations with emphasis on such topics as values, groups, power, communicating, conflict management, motivation, and human diversity. Au Qtr. Prereq: 806 or 846.

**861 Fundamentals of Supervision G 3**

Supervision of instruction emphasizing general principles and practices in elementary and secondary schools. Au, Wi, Sp Qtrs. 1 2 1/2-hr cl.

**866 Supervision Theory G 3**

Advanced study of supervision of instruction; kindergarten through the 12th grade. Donmoyer. Sp Qtr. 2 1 1/2-hr cl. Prereq: 861 or equiv.

**884 Planned Field Experience**

Planned professional teaching experience in a public school or other educational agency under supervision. Prereq: Written permission of area adviser. Repeatable to a maximum of 15 or hrs. These courses are graded S/U.

**884.35 Higher Education Administration G 3-15****884.44 Planned Field Experience: Educational Administration and Supervision G 1-15**

884D443 or 6

Prereq: Permission of faculty adviser.

**925 Seminars G 2-5**

Prereq: Written permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

Research problems in:

**925.44 Seminars: Educational Administration and Supervision****949 Collective Bargaining and Contract Administration in Education G 3**

Introduction to the processes of collective bargaining in educational organizations. Young.

Su, Au Qtrs. 1 2 1/2-hr cl. Prereq: 810, 846, 847, 848, 849, or permission of the instructor.

**952 Legal Aspects of School Administration G 3**

A study of statutory and case law, legal principles, and provisions relevant to educational administration, particularly in the areas of personnel, finance, curriculum, contracts, property, liability, and organization. Su, Wi, Sp Qtrs. 1 2 1/2-hr cl. Prereq: 846 or equiv.

**953 School Community Relations G 3**

Principles and practice in developing and maintaining appropriate school community relationships; opinion analysis; communication processes; decision-making patterns. Su, Sp Qtrs. 1 2 1/2-hr cl. Prereq: 846 or equiv.

**955 Staff Personnel Administration G 3**

Study of personnel administration in educational institutions; theory, principles, and practices as they relate to personnel policy, recruitment, selection, orientation, appraisal, in-service education, promotion, collective negotiations, and general welfare. Young. Wi Qtr. 1 2 1/2-hr cl. Prereq: 846.

**956 School Finance G 3**

Examination of the theory and economics of financing public education; emphasis on sources of revenue, variations in ability and effort, state-local plans, and the federal role. Su, Au Qtrs. 1 2 1/2-hr cl. Prereq: 846.

**957 Business Administration of Schools G 3**

Function and role of business administrators in schools; emphasis on budgeting; payroll and accounting; purchasing; planning, constructing, operating, and maintaining the school plant. Sp Qtr. 1 2 1/2-hr cl. Prereq: 846.

**958 Educational Facility Planning G 3**

Problems and techniques in determining educational facility needs, evaluating facilities, planning for new construction and remodeling, and utilizing specialized personnel; related legal and financial aspects. Su Qtr. 1 2 1/2-hr cl. Prereq: 846 or equiv.

**959 Doctoral Core in Educational Administration I G 4**

Analysis of significant research in organization theory. Au Qtr. 2 2-hr cl, lab arr. Prereq: Master's degree and permission of instructor.

**960 Doctoral Core in Educational Administration II G 4**

Advanced study of administrative problems and organizational behavior from an historical perspective. Wi Qtr. 2 2-cl, lab arr. Prereq: 959 or Ed-Admin 959.

**961 Doctoral Core in Educational Administration III G 4**

Advanced study in educational politics and policy making. Mitchell. Sp Qtr. 2 2-hr cl, lab arr. Prereq: 960 or Ed-Admin 960.

**962 Board Relations G 3**

A study of the respective ideas and responsibilities of the board of education (board of trustees) and the superintendent (chief educational administrator) in the governance of the school district (college/university). Su, Wi, Sp Qtrs. 2 1/2-hr cl. Prereq: 810, 846, 848, 849, 861, and 925D44.

**963 Legal Aspects of Special Education Administration G 3**

Legislative, executive, and judicial action pertaining to the rights of students with disabilities, with focus on the responsibilities of school administrators and state officials. Au, Sp Qtrs. 1 cl. Prereq: 840, 952N, or permission of instructor.

**999 Research G Arr**

Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**999.35 Higher Education Administration****999.44 Educational Administration and Supervision****Higher Education and Student Affairs**

301 Ramseyer Hall, 29 West Woodruff Avenue, 292-7700

**270 Seminars in Career and Self Development U 3**

Examination of self in relation to educational and career goals; self assessment, decision making, identification, and use of campus resources, employability, and work adjustment skills.

Au, Wi, Sp Qtrs. 1 2 1/2-hr cl. Repeatable to a maximum of 6 or hrs including or hrs in Ed-P&L 270.04; with a maximum of 3 or hrs in any decimal subdivision. This course is graded S/U.

**270.01 Self-Career Development**

Designed to provide opportunities for self-exploration and skill development; exploration of and clarification of vocational and educational interests.



**270.04 Career Development and Leadership Training in Higher Education**

Designed to explore possible careers in higher education and to conduct leadership training in terms of higher educational functions and organizations.

**692 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

**693 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Ed-T&P 451 or Ed-T&P 460, and written permission of instructor. A total of not more than 30 cr hrs in individual study (any 693) will apply toward graduation for undergrad students, 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. These courses are graded S/U.

**693.32 Higher Education****694 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**694.32 Higher Education****723 Individual Development in Educational Change U G 3**

Developmental processes of individuals are examined and related to processes of educational development, with special attention given to the nature of self-development, interpersonal communications and creative behavior.

Sp Qtr. 1 3-hr cl. This course is graded S/U.

**780 Introduction to Student Personnel Work U G 3**

The nature of and the issues involved in student personnel work in higher education.

Au Qtr. 2 1 1/2-hr cl. Hollingsworth.

**781 Academic Advising Process U G 2**

An overview of the academic advisement process including practical and philosophical questions about advisement and the role of the adviser. V. Gordon.

Wi Qtr. 2 cl. Prereq: Permission of instructor.

**782 Practice of College Student Personnel Work U G 3**

First practical course in professional sequence; prerequisite to field work practice; major services are examined and discussed; outstanding practitioners consult on their work. Rodgers.

Wi Qtr. 2 1 1/2-hr cl. Prereq: Permission of instructor.

**884 Planned Field Experience**

Planned professional teaching experience in a public school or other educational agency under supervision.

Prereq: Written permission of area adviser. Repeatable to a maximum of 15 cr hrs.

**887 Student Personnel Programs for the Culturally Different G 3**

A survey of collegiate experimental programs and practices, their philosophies, organization, administration, educational audiences, etc., for the culturally different with emphasis on black Americans.

Au Qtr. 1 2 1/2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**888 Group Interventions in Student Personnel Work G 3**

Emphasis on laboratory learning process for interpersonal growth and organizational dynamics; treatment of group theory, processes, and dynamics. Rodgers.

Au Qtr. 1 3-hr cl, mandatory weekend lab. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**894 Group Studies G 1-5**

Advanced group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**925 Seminars G 2-5**

Prereq: Written permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Research problems in:

**925.32 Higher Education****926 Student Personnel Work as a Professional Field G 3**

Designed to provide an opportunity, by a study of current, historical, and philosophical materials, for the formulation of a sound intellectual basis for professional practice in student personnel work. Silverman.

Sp Qtr. 2 1 1/2-hr cl. Prereq: Permission of instructor.

**930 Internship in College Student Personnel Work G 6-12**

Student's are assigned as a participant-observer in a work situation closely approximating their vocational goals, under the supervision of a qualified practitioner; full-time commitment is normally expected.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**943 Interaction of the Student and the College Environment G 3**

A focus on the nature of the college environment, entering student, academic procedures, student performance, and student culture for those planning careers in college student personnel work. Rodgers.

Sp Qtr. 2 1 1/2-hr cl.

**945 Practicum in Student Personnel Work G 5**

Supervised practicum in campus student personnel agencies such as admissions, dean of students, housing, international students, student financial aid, student union, and undergraduate college offices. Sagaria and Silverman.

Su, Au, Wi, Sp Qtrs. 1 1 1/2-hr cl, 8-10 hrs lab arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**946 The Writings of C. G. Jung: Implications for Educational Research and Practice G 3**

The writings of Jung are critically examined; implications for educational research and practice are discussed, with emphasis on student/professional development, interpersonal communications, and learning. Rodgers.

Sp Qtr. 1 2 1/2-hr cl. Prereq: Grad standing

**947 The Theory of Psychological Types: Applications to Education G 3**

The theory of psychological types (C.G. Jung) and related literature will be critically examined, with applications to learner/teacher behaviors, achievement, academic advisement, assessment methods, and research. Rodgers.

Su Qtr. 2 2 1/2-hr cl.

**954 Theory and Practice of Student Personnel Administration G 3**

The organization and administration of student personnel services; organizational theory and approaches to organizational development, in the interest of institutional renewal. Sagaria and Silverman.

Au, Wi, Sp Qtrs. 1 3-hr cl. Repeatable to a maximum of 6 cr hrs.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**999.32 Higher Education****Humanistic Foundations**

121 Ramseyer Hall, 29 West Woodruff Avenue, 292-5181

**650 Humanistic Foundations of Education U G 3**

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 3rd yr standing in a recognized university teacher education program, or grad standing, or permission of dept office.

**650.01 Philosophy of Education**

Design to provide students with an application of philosophy of education to issues and problems of teaching and living in a culturally diverse society.

**650.02 History of Modern Education**

Education and schools as factors in the development of the modern world; theories, practice, relations with other social institutions and forces, especially in Europe and America.

**650.03 Applied Ethics for Teachers**

An examination of selected moral/ethical issues which face practicing educators emphasis on developing ethical decision-making skills.

**650.04 Social Criticism in American Education**

Analysis and interpretation of critical stances taken by selected major writers on educational topics of current interest.

**692 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

**692.55 Moral Education**

**693 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Ed-T&P 451 or Ed-T&P 460, and written permission of instructor. A total of not more than 30 cr hrs in individual study (any 693) will apply toward graduation for undergrad students, 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. These courses are graded S/U.

**693.40 History of Education and Comparative Education****693.41 Philosophy of Education****693.45 Moral Education****694 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**694.40 History of Education and Comparative Education****694.41 Philosophy of Education****694.45 Moral Education****697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-5**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Cross-listed in Ed Theory & Practice, Health Ed, Ed Policy & Leadership, Educ Studies, Physical Ed, and Recreation Ed.

Repeatable to a maximum of 9 cr hrs; subdivisions not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology.

**700.01 Seminar on Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

Wi Qtr.

**700.02 Changing Societal Values U G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumer/clients/ patients.

Au Qtr.

**700.03 Seminar on Ethical Issues Common to the Helping Professions U G 3**

Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.

Sp Qtr. Arr.

**700.04 Interprofessional Practicum in Clinical Settings U G 3 or 5**

Interprofessional teamwork in clinical settings.

Wi, Sp Qtrs. Arr. Prereq: Permission of instructor.

**700.05 Interprofessional Seminar in Policy Analysis U G 3**

Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

Wi Qtr.

**700.07 Interprofessional Approaches to Child Abuse and Neglect G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect

Au Qtr. 1 2 1/2-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

**701 Logic in Teaching U G 3**

Study of the logical aspects of teaching; includes attention to definitions, arguments, explanations, questions, and value judgments.

Au Qtr. 2 1 1/2-hr cl. Prereq: 650.01 and 4th yr standing.

**702 Modern Trends in Educational Philosophy U G 3**

A study of contemporary work in philosophy of education and applications of that work to educational practice.

Su, Au, Wi Qtrs. 1 2 1/2-hr cl. Not open to students with credit for Ed-P&L 822.

**717 Comparative Education U G 3**

Social and cultural factors influencing the differential development of educational institutions and organization.

Su, Au, Wi Qtrs. 1 2 1/2-hr cl. Prereq: 4th yr standing.

**722 Studies in the History of Educational Policy U G 3**

Historical analysis of social, economic, and political factors shaping public school policy in the US since 1800.

Au Qtr. 1 2 1/2-hr cl. Prereq: 4th yr standing.

**811 Sources of Progressive Thought in American Education G 3**

An examination of the ideas that provided the philosophical basis for progressive education with an emphasis on the historical context in which these ideas were developed.

Au, Sp Qtrs. 1 3-hr cl.

**812 American Schools and American Society G 3**

Education and schooling in the United States.

Su, Au, Wi Qtrs. 1 2 1/2-hr cl. Prereq: Grad standing.

**828 Ethical Problems in Education G 3**

An examination of theories of value in education which focuses on the philosophical problems of formulating and defending moral judgements.

Su, Wi Qtrs. 1 2 1/2-hr cl.

**852 A History of the Education of Women G 3**

Investigation and critical analysis of selected educational theories by significant past and present theorists who have addressed the education of women.

Sp Qtr. 1 2 1/2-hr cl. Prereq: Grad standing.

**862 Role of the School in the Social Order G 3**

An orientation for teachers and administrators which deals with the basic purposes of secondary education in relation to major issues and current trends.

Su, Au, Wi Qtrs. 1 2 1/2-hr cl. Prereq: Ed-T&P 585 or secondary (587) student teaching or equiv.

**884 Planned Field Experience**

Planned professional teaching experience in a public school or other educational agency under supervision.

Prereq: Written permission of area adviser. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**902 Educational Philosophy of John Dewey G 3**

A systematic study of the writings of John Dewey in their bearings upon educational theory and practice.

Sp Qtr. 1 2 1/2-hr cl. Prereq: 702 or 822.

**925 Seminars G 2-5**

Prereq: Written permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

Research problems in:

**925.40 History of Education and Comparative Education****925.41 Philosophy of Education****927 History of the Universities G 3**

The university as an institution through 10 centuries; patterns of development in different countries; German, English, and American contributions to the idea of the American university.

Wi Qtr. 2 1 1/2-hr cl.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**999.40 History of Education and Comparative Education****999.41 Philosophy of Education****999.55 Moral Education****Instructional Design and Technology**

236 Ramseyer Hall, 29 West Woodruff Avenue, 292-4872

**370 Computers in the Classroom: An Introduction U 3**

An introduction to educational computing.

Su, Au, Wi, Sp Qtrs. 2 cl, 4 hrs lab. Not open to students with credit for Ed-P&L 671.

**600 Basic Media Skills U G 1**

Self-instructional modules and activities emphasizing the selection, utilization, and preparation of teaching material.

Su, Au, Wi, Sp Qtrs. 3 hrs lab. Prereq: Admission to a teacher education program certification area or permission of instructor. Cost of production materials must be borne by the student. Not open to students with credit for Ed-T&P 600. This course is graded S/U.

**671 Fundamentals of Computer Applications in Education and Training U G 4**

An introduction to the common uses of computers in educational and training settings; emphasis on instruction and management.

1 2-hr cl, 4 hrs lab, 2 hrs arr. Not open to students with credit for Ed-P&L 370. Open only to professional educators.

**675 Audiovisual Materials of Instruction U G 4**

Designed to provide basic experience in theory, design, preparation/selection, utilization, and evaluation of materials and equipment available in modern learning environments; emphasis on a final synthesizing project. 2 cl, 2 2-hr lab.

**676 Planning and Preparing Teacher-Made Educational Media U G 3**

Demonstration and practice in the preparation of teaching materials using desktop publishing; emphasis on the development of fliers, worksheets, overheads, and simple animations.

1 2-hr cl, 1 2-hr lab. Prereq: 4th yr or grad standing. Not open to students with credit for Ed-T&P 676.

**677 Educational Telecommunications U G 3**

The varied types of educational telecommunications in relation to designs, planning, production, utilization, and evaluation. Erdman.

Prereq: 4th yr standing. Not open to students with credit for Ed-T&P 677.

**678 Introduction to Instructional Systems Development U G 3**

Paradigms for instructional development; learner, task, and curriculum analysis; prototype development; completion of a production proposal/storyboard; subsequent enrollment in 778 expected.

1 2-hr cl, 1 2-hr lab. Prereq: 675. Not open to students with credit for Ed-T&P 678.

**680 Instructional Television Production U G 4**

Functions and operations of small format video production and post-production equipment; application of theory and research to the production of video materials for instruction.

2 1/2-hr cl, 2 1/2-hr lab, arr. Prereq: 677 and 678 recommended.

**692.43 Interactive Technologies Workshops U G 1-8**

Intensive study of a problem in interactive technologies for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

**692.46 Instructional Design Workshop U G 1-8**

Intensive study of a problem in instructional design common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Repeatable. This course is graded S/U.

**693 Individual Studies U G 1-4**

Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30 cr hrs for the doctoral degree. These courses are graded S/U

**693.43 Interactive Technologies**

Intensive individual study of a special problem in interactive technologies.

**693.46 Instructional Design**

Intensive individual study of a special problem in instructional design.

**694 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**694.43 Interactive Technologies****694.46 Instructional Design****775 Foundations of Librarianship for Educators U G 3**

Critical examination of libraries and the role of librarians in contemporary society, emphasizing their function in education.

Sp Qtr. 1 3-hr cl.

**778 Formative Evaluation of Instructional Systems U G 3**

Theory and practice of developmental testing and field evaluation of instructional systems.

Wi Qtr. 1 3-hr cl. Prereq: 678 and course(s) in media production resulting in a prototype instructional system. Not open to students with credit for Ed-T&P 778.

**779 Development and Management of Educational Media Centers G 3**

Media specialist's responsibilities for the successful operations of a media program; planning, organization, administration, and service functions; emphasis on school library media programs.

Prereq: 675 or equiv. Not open to students with credit for Ed-T&P 679.

**788 Computer Concepts and Skills for Educators**

Practica in using various programming languages and common microcomputing operating systems.

Prereq: Cptr/Inf 548, Ed-P&L 671, or permission of instructor. Not open to students with credit for Ed-T&P 788.

**788.01 PILOT Authoring Language U G 5**

Systematic exploration of instructional and educational problems for which interactive, instructional courseware can provide powerful solutions; practical experience in using the PILOT authoring system to address those problems.

2 cl, 8 hrs lab. Prereq: Cptr/Inf 548, Ed-T&P or Ed-P&L 678, or permission of instructor.

**823 The Functions of the Computer in the Classroom G 3**

A critical examination of the issues raised by the implementation and use of microcomputers in schools.

Au, Sp Qtrs. 3 cl. Prereq: 670 or equiv.

**853 Women, Technology, and Education G 3**

Analysis of issues in the relationships between women's lives and technological development; exploration of current needed educational response to these issues.

Wi Qtr. 1 2 1/2-hr cl.

**875 Theory and Practice of Cataloging and Classifying Materials for School Media Centers G 3**

Principles, problems, and methods of descriptive cataloging for print and audiovisual materials. Erdman.

3 cl. Prereq: 675; students without undergraduate course work in cataloging will be required to complete a 1 hr/wk lab during 831. Not open to students with credit for Ed-T&P 831.

**876 Reference Services in the School Media Center G 3**

Principles, problems, and methods of reference services, including organization and administration of key tools (dictionary, directories, and encyclopedias) for both print and audiovisual materials. Erdman.

3 cl. Prereq: 831 or equiv. Not open to students with credit for Ed-T&P 832.

**877 Appraisal, Selection, and Acquisition of Instructional Materials for School Media Centers G 3**

Criteria and strategy for the appraisal, selection, and acquisition of instructional materials related to curricular and personal needs of school media center users.

3 cl. Prereq: 832. Not open to students with credit for Ed-T&P 833.

**879 Developing Computer-Based Concepts Lessons G 5**

Application of research knowledge to the development of computer-based lessons for teaching concepts.

Wi Qtr. 2 cl, 2 hrs lab, 4 hrs arr. Prereq: 678, 788, or permission of instructor.

**880 Developing Computer-Based Problem Solving Lessons (Simulations) G 5**

Application of research knowledge to the development of computer-based lessons for teaching problem solving.

2 hr cl, 2-hrs lab, 4-10 hrs arr. Prereq: 678, 788, 879, or permission of instructor.

**883 Practicum in Development and Management of Specialized School Media Services G 3**

Organization and administration of specialized media services (e.g., TV photography, CAI, and graphics) for education—design, needs assessment, personnel, budget, facilities and accountability.

3 cl and arr field visits. Prereq: 679. Not open to students with credit for Ed-T&P 835. Not appropriate for fulfilling requirements for certification in school administration.

**884 Planned Field Experience G 1-15**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser. Repeatable to a maximum of 15 cr hrs.

**884.43 Interactive Technologies**

Planned professional experience under supervision in a public school or other educational setting.

**884.46 Instruction Design**

Planned professional experience under supervision in a public school or other educational setting.

**889 Practicum in Instructional Design and Technology G 3-5**

Group observation, limited participation, and functional analysis of design and implementation in instructional systems and environments.  
2 cl, 3-9 hrs arr. Repeatable to a maximum of 10 cr hrs, including cr hrs in Ed-T&P 889.

**895 Fundamentals of Instructional Materials and Media G 3**

Theory in educational media applied to the process of instructional development.

1 3-hr cl. Prereq: 675 or practical experience in using educational media in school settings. Not open to students with credit for Ed-T&P 806.

**897 Interactive Video for Instruction G 4**

Introduction to the instructional capabilities and hands-on development of interactive videotape and videodisc; topics include relevant learning theories, programming techniques, and design models.

Au, Sp, Qtrs. 2 cl, 4-hrs lab. Prereq: 678. Fundamentals of computing recommended.

**925 Seminars G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

**925.43 Interactive Technologies****925.46 Instructional Design****999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U

**999.43 Interactive Technologies****999.46 Instructional Design**

## Educational Services & Research

356 Arps Hall, 1945 North High St., 292-8183

See also Educational Policy and Leadership.

The areas of specialization and the courses in the Department of Educational Services and Research comprising these areas of specialization are listed below:

**Counselor Education, 292-8936**

270.01, 270.02, 270.03, 270.04, 271, 289.01, 289.02, 692.34, 693.34, 694.34, 767, 768, 773, 774, 775, 776, 779, 798, 875, 876, 884.34, 893.34, 894.34, 925.34, 926.01, 926.02, 926.03, 926.04, 926.05, 926.06, 926.07, 926.08, 926.09, 927, 928, 974, 975, 976, 977, 978, 995, 999.34.

**Educational Research and Evaluation, 292-3239**

693.60, 694.60, 744, 745, 760, 765, 769, 785, 786, 795, 796, 797, 807, 808, 809, 810, 820, 840, 850, 851, 852, 853, 854, 867, 884.60, 925.60, 930, 966, 999.60.

**Gifted**

692.66, 693.66, 694.66, 705, 805, 884.66, 885.66, 893.66, 925.66, 999.66.

**Rehabilitation Services, 292-8174**

693.25, 790, 791, 792, 844, 845, 862, 864, 884.25, 893.25, 925.25, 979, 999.25.

**School Psychology, 292-8148**

692.61, 693.63, 875, 884.63, 893.63, 894.61, 925.61, 986, 987, 988, 989, 990, 991, 992, 999.63.

**Special Education, 292-8148**

251, 289.47, 506, 588.14, 588.54, 588.58, 588.62, 649, 651, 660, 665, 670, 671, 677, 685, 692.47, 692.48, 692.52, 692.54, 692.62, 693.14, 693.47, 693.48, 693.52, 693.54, 693.55, 693.58, 693.62, 693.64, 694.14, 694.47, 694.48, 694.54, 694.55, 712, 715, 718, 725, 738, 742, 743, 746, 747, 748, 749, 750, 751, 752, 764, 766, 771, 772, 812, 813, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 844, 845, 847, 848, 849, 884.14, 884.47, 884.48, 884.52, 884.54, 884.55, 884.58, 885.14, 885.48, 885.52, 885.54, 885.55, 885.58, 885.62, 893.14, 893.47, 893.48, 893.52, 893.54, 893.55, 893.58, 893.62, 893.64, 894.48, 894.55, 925.47, 925.48, 925.52, 925.54, 925.55, 925.62, 999.14, 999.47, 999.48, 999.52, 999.54, 999.55, 999.58, 999.62, 999.64, 999.67.

**251 Introduction to Exceptional Learners U 3**

Overview of educational treatment and rehabilitation programs for individuals with sensory, orthopedic, behavioral, and learning problems. Gardner.

Wi, Sp Qtrs. 1 2 1/2-hr cl. Prereq: Written permission of instructor.

**270 Seminars in Career and Self Development U 3**

Examination of self in relation to educational and career goals; self assessment, decision making, identification and use of campus resources, employability, and work adjustment skills.

Au, Wi, Sp Qtrs. 1 2 1/2-hr cl. Repeatable to a maximum of 12 cr hrs, including cr hrs in Ed-P&L 270.04; with a maximum of 3 cr hrs in any decimal subdivision. These courses are graded S/U.

**270.01 Self-Career Development**

Designed to provide opportunities for self-exploration and skill development; exploration of and clarification of vocational and educational interests.

**270.02 Personal Growth to Increase Career Competencies**

Designed to provide opportunities to assist in self-exploration of and clarification for more effective development beyond the level of average performance.

**270.03 Study Skills Related to Career Goals**

Designed to assist underachieving students with their efforts to ascertain and resolve the causes of low academic productivity; attitudinal and behavioral skills emphasized.

**270.04 Career Development and Leadership Training in Higher Education**

Designed to explore possible careers in higher education and to conduct leadership training in terms of higher educational functions and organizations.

**271 Seminar in Exploring Helping Relationships: Teaching/Learning U 3**

Focus on self development, decision making, world of work for students exploring careers through placement in educational, and community agency settings.

Au, Wi, Sp Qtrs. 1 3-hr cl. Repeatable to a maximum of 6 cr hrs with special written permission, when unusual circumstances warrant. To be taken concurrently with field experience 289.01.

**289 Field Experience U 2-5**

Professional service with children or youth in some school or community agency.

Prereq: Permission of instructor.

**289.01 Introductory Experience in a School System**

Au, Wi, Sp Qtrs. 160 field contact hrs. Repeatable to a maximum of 10 cr hrs with special permission when unusual circumstances warrant. This course is graded S/U.

**289.02† Experience in a Community Agency**

160 field contact hrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**289.47 General Special Education**

Wi, Sp Qtrs. 2-5 hrs practicum. Repeatable to a maximum of 20 cr hrs.

**294 Group Studies U 1-5**

Group studies for students in specialized programs.

Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**506 Senior Seminar: Transition to Teaching U 2**

A seminar focusing on problems and prospects for transitioning to professional service with specific focus on problems encountered in the induction period. Cooper.

Sp Qtr. 1 2-hr cl. Prereq or Concur: Student teaching. Not open to students with credit for Phys Ed 506. Cross-listed in Physical Education.

**541† Introduction to Educational Research and Evaluation U 3**

A study of empirical methods as they apply in educational research, development, and evaluation settings. D'Costa.

1 2-hr cl, 1 2-hr lab. Repeatable to a maximum of 9 cr hrs, including cr hrs Ed T&P 541.

**588 Student Teaching in Special Fields U 3-15**

Au, Wi, Sp Qtrs. Prereq: Educ 4th yr standing and written permission of instructor. A minimum of 15 cr hrs in student teaching is required. Repeatable to a maximum of 15 cr hrs. For additional information see the *College of Education Bulletin*. These courses are graded S/U.

**588.14 Severe Behavior Disabilities****588.54 Developmental Disabilities****588.58 Orthopedic Disabilities****588.62 Specific Learning Disabilities****649† Medical Aspects of Mental Retardation and Developmental Disabilities U G 2**

Interdisciplinary issues of genetics, nutrition, neurology, psychiatry, and pediatrics; designed for teachers and related service personnel in the field of MR/DD.

1 2-hr cl. Prereq: Permission of instructor and jr standing in non-medical programs involving MR/DD.

**651 Introduction to Exceptional Children U G 3**

An overview of the education of exceptional learners including a discussion of their characteristics and a review of historical approaches to their education and of contemporary educational practices. Ward.

Au, Sp Qtrs. 1 2 1/2-hr cl. Not open to students with credit for Psych 570.

**660 Language Competence of Children and Youth with Disabilities U G 3**

Familiarization of students entering special education with the impact of disabling conditions on children and youth's development of language. Connard.

Au Qtr. 1 2 1/2-hr cl. Prereq: 251 or equiv.

**665 Integrating Students with Disabilities into School Settings U G 3**

Educational programs and instructional procedures for students with disabilities in regular school settings; emphasis on the role of the regular educator. Connard.

1 2 1/2-hr cl. Prereq: Permission of instructor.

**670 Remedial and Clinical Reading Instruction U G 3**

An overview of theory and practice, including causes, diagnostic procedures, remediation, and instructional materials.

Su, Au, Wi Qtrs. 1 2 1/2-hr cl. Not open to students with credit for Ed-T&P 670. Cross-listed in Educational Theory and Practice.

**671 Clinical Practice in Treating Reading Disabilities U G 3**

Use of test materials in the diagnosis of reading disabilities; practice with remedial procedures. McCormick and Paul.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl, 3 1-hr lab arr. Prereq: Ed T&P 732 and permission of instructor. Not open to students with credit for Ed-T&P 671. Cross-listed in Educational Theory and Practice.

**677 The Parent/Professional Partnership U G 3**

Knowledge and skills necessary for educators to assist parents in facilitating the development, education, and socialization of children and youth and handicaps.

1 2 1/2-hr cl. Prereq: Permission of instructor.

**685 Orientation and Mobility for Teachers of Students with Visual Disabilities U G 3**

Readiness activities, assessment procedures, instructional strategies, and direct experience with selected travel techniques for persons with visual disabilities.

1 2 1/2-hr cl. Prereq: 715 or equiv.

**692 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Cl hrs arr. Prereq: Written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

- 692.34 Counselor Education
- 692.47 General Special Education
- 692.48 Multiple Disabilities
- 692.52 Visual Disabilities
- 692.54 Developmental Disabilities
- 692.61 Child Study
- 692.62 Specific Learning Disabilities
- 692.66 Gifted

**693 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of any 693 will apply toward graduation for undergrad students. For plan A, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree; for Plan B, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. These courses are graded S/U.

- 693.14 Severe Behavior Disabilities
- 693.25 Rehabilitation Services
- 693.34 Counselor Education
- 693.47 General Special Education
- 693.48 Multiple Disabilities
- 693.52 Visual Disabilities
- 693.54 Developmental Disabilities
- 693.55 Hearing Disabilities
- 693.58 Orthopedic Disabilities
- 693.60 Educational Research and Evaluation
- 693.61 Child Study
- 693.62 Specific Learning Disabilities
- 693.63 School Psychology
- 693.64 Remedial and Clinical Reading
- 693.66 Gifted
- 693.67 Special Education Administration

**694 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed T&P 694.60.

- 694.14 Severe Behavior Disabilities
- 694.34 Counselor Education
- 694.47 General Special Education
- 694.48 Multiple Disabilities
- 694.54 Developmental Disabilities
- 694.55 Hearing Disabilities
- 694.60 Educational Research and Evaluation
- 694.66 Gifted

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable to different titled study tours only.

- 698.01 Domestic
- 698.02 Foreign

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Cross-listed in Ed Policy & Leadership, Ed Theory & Practice, Ed Studies, Health Education, Physical Education, and Recreation Education.

**700.01 Seminar on Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

**700.02 Changing Societal Values U G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.

**700.03 Seminar on Ethical Issues Common to the Helping Professions U G 3**

Ethical issues of concern to the professions and arising out of advanced technology; euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.

**700.04 Interprofessional Practicum in Clinical Settings U G 3 or 5**

Interprofessional teamwork in clinical settings.

Prereq: Permission of instructor.

**700.05 Interprofessional Seminar in Policy Analysis U G 3**

Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

Wi Qtr.

**700.07 Interprofessional Approaches to Child Abuse and Neglect G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

Au Qtr. 1 2 1/2-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

**705 Teaching Gifted Students—Educational and Psychological Approaches G 3**

An examination of historical trends, educational, psychological, and philosophical factors in the education of gifted persons. Swassing.

Au Qtr. 1 2 1/2-hr cl. Prereq: 651 or permission of the instructor.

**712 Early Intervention for Children with Disabilities U G 3**

Study of education of infants and preschool children with disabilities emphasizing model programs with an interdisciplinary focus. Connard and Sainato.

Au Qtr. 1 2-hr cl. 2-hr field-based experience. Prereq: An introductory course in special ed (251, 651, or equiv), a course in child dev (Fm&Hu Dv 361), or the family (Fm&Hu Dv 360, Sociol 430, or equiv). Not open to students with credit for Ed-HuSer 712.

**715 Education of Students with Physical, Sensory, and Multiple Disabilities U G 3**

Study of the education and habilitation of children and adults with physical, sensory, or multiple disabilities including individuals with severe and profound retardation and autistic-like characteristics.

Au Qtr. 1 2 1/2-hr cl. Prereq: 251 or 651 or equiv.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Family Relations and Human Development, Human Nutrition and Food Management, Nursing, Physical Education, Psychology, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models. Wi Qtr. 1 3-hr cl. Not open to students with credit for 717.01 in any cross-listed areas.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su Qtr. 1 2-hr cl. Not open to students with credit in 717.02 in any cross-listed areas.

**718 Education of Mildly-Disabled Children and Adults U G 3**

Overview of problems, issues, and practices in educating children and adults with developmental, learning, and behavior disabilities. Sainato.

1 2½-hr cl. Not open to students with credit for 770.

**725 Advanced Educational Procedures and Programming for Moderately, Severely, and Profoundly Handicapped U G 3**

Procedures and programming for moderately, severely, and profoundly handicapped children; review of teaching strategies, curriculum and development, and eight major curriculum areas for educational programming.

Sp Qtr. Prereq: 742 or written permission of instructor. Repeatable to a maximum of 6 cr hrs.

**727 Special Topics in Education P G 1-5**

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Prereq: Grad standing or registration in one of the professional schools. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.10 Educational Services and Research****727.14 Severe Behavior Disabilities****727.34 Counselor Education****727.47 General Special Education****727.48 Multiple Disabilities****727.52 Visual Disabilities****727.54 Developmental Disabilities****727.55 Hearing Disabilities****727.58 Orthopedic Disabilities****727.60 Educational Research and Evaluation****727.61 Child Study****727.62 Specific Learning Disabilities****727.63 School Psychology****727.64 Remedial and Clinical Reading****727.66 Gifted****727.67 Special Education Administration****738 Introduction to American Sign Language U G 3**

Introduction of the use of signs and finger spelling in American Sign Language. Paul.

1 3-hr cl. Prereq: 661 and/or written permission of instructor.

**742 Applied Behavior Analysis for Teachers U G 3**

Study of principles of behavior for the development and maintenance of academic and social behaviors.

Au Qtr. Not open to students with credit for 722.

**743 Educational Assessment of Exceptional Learners U G 3**

Examination of issues and procedures associated with planning, conducting, scoring, and interpreting educational assessments. Heron.

Au Qtr. 1 2½-hr cl. Prereq: 251 and 651 or equiv. Not open to students with credit for 711.

**744 Assessment for Classroom Teachers G 2-4**

Concepts and practical experience in student assessment with optional clinical work.

Au, Sp Qtrs. 2 1-hr cl for 2 cr hrs, 20 hrs of clinical experience in public schools for each additional cr hr. Prereq: Grad standing and enrollment in a teacher education program.

**745 The Inquiry Process — The Classroom Teacher as an Inquirer and Consumer of Research G 2-4**

Approaches to educational research with critical review of research studies and their relationship to practice.

Au, Sp Qtrs. 2 1-hr cl for 2 cr hrs, 20 hrs of clinical experience in public schools for each additional cr hr. Prereq: Grad standing and enrollment in a teacher education program.

**746 Behavioral Consultation in School, Clinic, and Home Settings U G 3**

Focuses on providing behavioral consultation to regular and special education teachers, administrators, students, and parents; analyses the development, implementation, and evaluation of consultation programs in school, clinics, and home settings. Heron.

Au, Sp Qtrs. 1 2½-hr cl. Prereq: 771 and written permission of instructor.

**747 Curriculum and Instructional Strategies for Students with Physical, Sensory, and Multiple Disabilities U G 3**

Development and adaptation of curriculum, materials, and instructional procedures for teaching students with physical, sensory, and multiple disabilities.

3 cl. Prereq: Permission of instructor. Not open to students with credit for 714.

**748 Curriculum and Instructional Strategies for Students with Mild Disabilities U G 3**

Content of the curriculum, instructional strategies, media, materials, and technologies for teaching students with mild disabilities and of different ages and cultural backgrounds.

5 cl. 10 hrs practicum. Prereq: Written permission of instructor. Not open to student with credit for 777.

**749 Instructional Methods for the Transition of Secondary School Students with Disabilities U G 3**

Study of the application of teaching techniques and materials for the education of secondary school student with disabilities.

1 2½-hr cl. 20 hrs practicum. Prereq: Written permission of instructor. Not open to students with credit for 778.

**750 Teaching Social Behavior to Students with Disabilities U G 3**

Nature of social skills, importance of social skills planning in the curriculum, and the special social-skill needs of learners with disabilities. Cartledge.

Wi Qtr. 1 2½-hr cl. Prereq: Permission of instructor.

**751 Advanced Educational Procedures for Learning Disabled Students U G 6**

Develops advanced training in learning strategies and individualized methods for elementary and secondary students with specific learning disabilities.

Sp Qtr. 1 2½-hr cl, 3-hr practicum, 6 hrs arr. Prereq: Ed-S&R 651 or 770, 777, 778, and permission of instructor.

**752 Crisis Intervention and Instructional Management of SBH U G 6**

Examination of the problems, issues, and practices relative to educating children with severe behavior disorders.

Sp Qtr. 1 2½-hr cl, 6 hrs field work, arr. Prereq: Permission of instructor.

**753 Teaching in the Allied Health Professions G 3**

Principles and practice of teaching the allied health professions; focuses on various teaching roles and strategies of allied health professionals in academic and clinical settings.

Sp Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**760 Management of Educational Research and Development U G 3**

An examination of the theory, practice, and problems associated with the administration and management of research and development in educational systems and institutions.

1 3-hr cl. Prereq: Bus-Mgt 701 for undergrads; Bus-Mgt 800 for grad students. Not open to students with credit for Ed T&P 760.

**764 Planning and Implementing Instruction for Generalized Outcomes U G 3**

Examination of guiding principles and operational procedures for designing and implementing instructional programs that promote the generality of newly learned skills. Heward.

Wi Qtr. 1 2½-hr cl. Prereq: 742 and permission of instructor.

**765 Introduction to Educational Evaluation U G 3**

Introduction to educational evaluation including history, models, theories, politics of evaluation, and types of evaluation.

1 2½-hr cl. Prereq: 785 or Ed-T&P 785 and/or permission of instructor. Not open to students with credit for Ed-T&P 765.

**766† Trends, Issues, and Technological Developments in Teaching Visually Handicapped Students U G 3**

Study of technological research and vocational implications for visually handicapped students; development of basic skills for teaching use of audio, visual, and tactual aids including Optacon. Ward.

1 2½-hr cl. Prereq: 684.

**767 Assessment in Counseling: Instrumentation U G 3**

An introduction to the concepts and techniques in the appraisal of the individual with an emphasis on basic statistical concepts, and an overview of the instrumentation; designed for counselors who will be working in school, mental health, and rehabilitation settings.

1 2 1/2-hr cl. Prereq: 773 or permission of instructor.

**768 Assessment in Counseling: Interpretation U G 3**

A continuation of 767 involving a more advanced study of concepts and techniques in the appraisal of the individual with an emphasis on the development of case studies, and interpretation of standardized and non-standardized assessment instruments; designed for counselors who will be work in in school, mental health, and rehabilitation settings. Perosa.

1 2 1/2-hr cl. Prereq: 767.

**771 Exceptional Children: Assessment and Instruction U G 6**

Academic and social assessment and instruction of children with learning behavioral disorders in a clinical setting. Cooper.

Au, Wi, Sp Qtrs. 3 cl, 3 lab. Prereq: Permission of instructor.

**772 Applying Behavioral Approaches in the Classroom U G 3**

Classroom management problems, classroom engineering, assessment for teaching and roles of key people in a behavioral model designed for children with learning and behavior disorders. Heward.

Au, Sp Qtrs. 1 2 1/2-hr cl. Prereq: 742.

**773 Counseling Services and Techniques U G 3**

Counseling services and techniques used to help individuals live and work effectively in a complex society. Prereq: Educ 451.

**774 Introduction to Counseling U G 3**

Introduction to counseling theories with emphasis on theoretical bases and applications in selected school and community settings. Tosi.

2 2 1/2-hr cl. Prereq: 773.

**775 Group Counseling U G 3**

An overview of theories, issues, and trends of group counseling.

1 2 1/2-hr cl. Prereq: Permission of instructor.

**776 Counseling Children U G 3**

An overview of child behavior and concerns with emphasis on counseling theory as applied to children and general treatment modalities. Parmer.

1 2 1/2-hr cl.

**779 Educational and Career Counseling U G 5**

Theories, instruments, and resources for educational and career counseling of individuals and groups.

1 2 1/2-hr cl, 1 2-hr lab. 20 clinical hrs. Prereq: 768 and written permission of instructor.

**785 Introduction to Inquiry, Principles, Strategies, and Techniques U G 3**

Introduction to inquiry strategies and their role in educational development; emphasis is on the conceptualization of educational problems.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 4th year or grad standing. Not open to students with credit for Ed T&P 785.

**786 Introduction to Inquiry: Quantitative Methods U G 3**

An introduction to quantitative techniques, with emphasis on application in educational settings.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 4th year or grad standing. Not open to students with credit for Ed-T&P 786.

**790 Principles and Practices of Rehabilitation Counseling U G 3**

Orientation to the vocational rehabilitation process; a survey of principles, history, philosophies, legislation, and techniques.

Au Qtr. 1 2 1/2-hr cl. Prereq: Permission of instructor.

**791 Orientation to Disabling Conditions U G 3**

An overview of major disabling conditions focusing on: etiology, treatment, and prognosis; physical restoration; the vocational and functional limitations created by the conditions.

Au Qtr. 1 2 1/2-hr cl. Prereq: Permission of instructor.

**792 Job Placement and Job Development for Persons with Disabilities U G 3**

An analysis of the theories and techniques involved in vocational counseling, job restructuring, and job development with the disabled worker; an introduction to models of interagency linkage and cooperation.

Wi Qtr. 1 2 1/2-hr cl. Prereq: 790 and permission of instructor.

**795 Proposal Development U G 3**

Principles, processes, and research relating to the creation of proposals for developmental and research activities in educational agencies and institutions.

1 2 1/2-hr cl. Prereq: 785 or equiv. Not open to students with credit for Ed-T&P 795.

**796 Classroom Test Construction U G 3**

General principles and techniques for construction and utilization of classroom tests for assessment of student achievement.

1 3-hr cl. Prereq: 4th yr or grad standing. Not open to students with credit for Ed-T&P 787.

**797 Information Processing in Education U G 4**

Major emphases are placed on current applications, limitations, problems, and potential of data processing, information system, and computer technology in education.

1 3-hr cl, 1 hr lab arr. Not open to students with credit for Ed-T&P 791.

**798+ Participating in Multifactorial Evaluation and Individual Education Programs G 3**

Practical application of legal requirements for special education identification and placement procedures for teachers, counselors, school psychologists, and other support personnel. Waddell.

1 2 1/2-hr cl. Prereq: Grad standing.

**800 Counseling: Practica in Basic Helping Skills G 2**

Provides the experiential component of 774: Introduction to Counseling and 775: Group Process.

Au, Wi, Sp Qtrs. 1 2-hr cl. These courses are graded S/U.

**800.01 Individual Counseling**

Intensive training in basic interviewing and counseling skills with a focus on self-assessment, and on increasing one's understanding of the complexities of interpersonal processes. Tosi.

Prereq: 774 or equiv and/or permission of instructor.

**800.02 Group Counseling**

An opportunity to experience the group process from a member's perspective, and to observe the role and function of a group facilitator.

Prereq: 775 or equiv and/or permission of instructor.

**801 Multiculturalism and Counseling G 3**

Explores cultural-specific issues and their impact on counseling.

**801.01 Multicultural Issues in Counseling**

An exploration of multicultural concerns related to the knowledge, belief/ attitudes, and skills of counselors. Parmer.

Prereq: 774 or permission of instructor.

**801.02 Multicultural Research in Counseling**

An examination of multicultural research design and methodology, and the impact these findings have on counseling. Parmer.

Prereq: 785 and/or 786 or their equivalents and 801.01 or equiv.

**805 Teaching the Gifted: Instructional and Curricular Adaptations G 4**

Information and skills for modifying curriculum for gifted presented in a workshop format. Swassing.

Sp Qtr. 2 1/2-hr cl, 2 hrs practica/wk. Prereq: 675 or 705.

**807 Educational Survey Research Methods G 3**

A study of the design principles, sampling, and data-gathering methods used in the conduct of educational survey research. Loadman.

2 1 1/2-hr cl. Prereq: 785 or Ed-T&P 785, and 786 or Ed-T&P 786 or equiv with written permission of instructor. Not open to students with credit for Ed-T&P 807.

**808 Experimental Design in Education I G 3**

An examination of logical and quantitative principles, especially the analysis of variance, underlying basic experimental designs employed in educational research. Kennedy.

Au Qtr. 2 1 1/2-hr cl. Prereq: 786 or Ed-T&P 786 or equiv. Not open to students with credit for students with credit for Ed-T&P 808.

**809 Experimental Design in Education II G 3**

An examination of intermediate quantitative principles and issues underlying experimental design in education, especially principles and issues associated with factorial designs employing multiple response measures. Kennedy.

Wi Qtr. 2 1 1/2-hr cl. Prereq: 808 or Ed-T&P 808 or equiv. Not open to students with credit for Ed-T&P 809.

**810 Experimental Design in Education III G 3**

An examination of repeated measurements, mixed, hierarchical, partial hierarchical, and quasi-experimental designs and associated methods of univariate and multivariate statistical analyses. Kennedy.

Ap Qtr. 2 2 1/2-hr cl. Prereq: 809 or Ed-T&P 809 or equiv. Not open to students with credit for Ed-T&P 810.

**812 Educational Assessment for Children with Disabilities G 3**

Strategies for educational assessment of the behavior of infants and preschoolers with disabilities, with emphasis on instructional program planning.

Wi Qtr. 1 2 1/2-hr cl. Prereq: 251, 651 or equiv; and 712.



**813 Instructional Programming in Early Childhood Special Education G 3**

Methods for development of language/communication, sensorimotor, cognitive, social, and motor skills.

Sp Qtr. 1 2½-cl. Prereq: 251, 651 or equiv; and 712.

**815 Teachers and Teaching: The Changing Context in Equity, Diversity, and Exceptionality G 3**

Examination of how attitudes, assumptions, and expectations within socially diverse classrooms influence the behaviors of educators, parents, and pupils. Case method: Analyzing experiences of teachers.

Su, Sp Qtrs. 1 cl. Prereq: Permission of instructor.

**820 Program/Project Management G 3**

The use of management information systems in the planning and controlling of educational research and development projects, with particular emphasis on network planning techniques.

1 3-hr cl. Not open to students with credit for Ed-T&P 820.

**821 Developing Early Communication of Children with Physical, Sensory, and Multiple Disabilities G 3**

Knowledge and techniques about functional communication and language acquisition for young children and youth with severe language problems.

Au Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**822 Developing Language Competence of Students with Hearing Disabilities G 3**

Study of language competence of children with hearing disabilities.

Wi Qtr. 1 3-hr cl. Prereq: 660 or equiv or permission of instructor.

**823 Reading for Students with Hearing Disabilities G 3**

Examination of reading theories, research, and implications for students with hearing disabilities.

Wi Qtr. 1 3-hr cl. Prereq: 671, 822, or their equivalents, and permission of instructor.

**824 Advanced Studies in Deafness G 3**

Cognitive and psychosocial theories, research, and implications for students with hearing disabilities.

Su Qtr. 1 3-hr cl. Prereq: 738 or equiv, and written permission of instructor.

**825 Principles and Programming for Persons Who are Severely or Multiply Disabled G 3**

Includes transdisciplinary focus, community-based curriculum, integration with nondisabled peers, and nonvocal communication.

Wi Qtr. 1 3-hr cl. Prereq: A course in educational programming for children with low-incidence disabilities, and a course in language development and permission of instructor.

**826 Visual Process and Educational Implications of Visual Disabilities G 3**

Components of vision, anatomy, and physiology of the eye; causes of impaired vision, educational implications of eye disorders, and interpretation of eye specialists' reports.

Au Qtr. 1 3-hr cl. Prereq: 651 or equiv, and permission of instructor.

**827 Reading and Writing Skills for Teachers of Low Vision and Blind Children G 3**

Modes of written communication for low vision and blind children, focusing on mastery of Grade 2 literary braille for initial reading instruction.

Au Qtr. 1 3-hr cl. Prereq: 670 or equiv, and permission of instructor.

**828 Modes of Communication and Instructional Materials for Students with Visual Disabilities G 3**

Continuation of modes of communication with focus on mastery of Nemeth Code for science and math notation.

Wi Qtr. 1 3-hr cl. Prereq: 827 and permission of instructor.

**829 Curriculum and Advanced Instructional Strategies for Students with Learning Disabilities G 3**

Advanced study of individualized methods of instruction for elementary and secondary students with specific learning disabilities; emphasis on assessment and design of appropriate instructional programs.

Au, Sp Qtrs. 1 3-hr cl. Prereq: Permission of instructor.

**830 Strategies for Effective Individual Instruction G 3**

Advanced study of precision teaching as a methodology for the systematic evaluation of learning and use in all instructional tactics and curricula.

Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Permission of instructor.

**831 Strategies for Effective Group Instruction G 3**

Study of theory, research, and literature on strategies and tactics of group instruction.

Au, Sp Qtrs. 1 3-hr cl. Prereq: 742.

**832 Planning and Implementing Instruction for Generalized Outcomes G 3**

Guiding principles, general strategies, and specific tactics for designing instruction that promotes the generality of newly learned skills over time, settings, and response classes.

Wi Qtr. 1 3-hr cl. Prereq: 831.

**833 Advanced Studies in the Education and Management of Students with Severe Behavior Disorders G 3**

Study of most recent research and literature on the education, management, and programming of students with severe behavior disorders.

Wi Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**840 Systems Concept in Education G 3 or 5**

Introduction to general systems theory and an overview of its utilization and application in the field of education.

2 2-hr cl. Not open to students with credit for Ed-T&P 847.

**844 Vocational Evaluation and Development G 3**

A study of vocational evaluation, development, and work adjustment materials and practices utilized in educational and rehabilitation settings. Scott.

1 2½-hr cl. Prereq: 790 or permission of instructor. Not open to students with credit for Ed-T&P 844. Cross-listed in Educational Studies.

**845 Work Adjustment and Development G 3**

A study of the principles and procedures of work adjustment and development techniques, methods, and resources utilized in educational and rehabilitation settings. Scott.

1 2½-hr cl. Prereq: Ed-T&P 730 or permission of instructor. Not open to students with credit for Ed-T&P 845. Cross-listed in Educational Studies.

**847 Transition from School to Employment and Community Life for Students with Disabilities G 3**

Programming for secondary students to facilitate successful transitions to adult life, including employment, post-secondary education, residential, and community concerns.

1 3-hr cl. Prereq: 651 or equiv and permission of instructor.

**848 Management and Administration of Programs for Exceptional Children G 4**

A review of technology, trends, and issues basic to the management and operation of a special education program with the intention of preparing leadership personnel. Magliocca.

1 3½-hr cl. Prereq: 651 and grad standing in special education; or written permission of instructor.

**849 Teaching Students with Severe Behavior Disorders G 3**

Introduction to problems, issues, and practices in educating children with severe behavior disorders including identification, assessment, educational programming, and legal considerations.

1 2½-hr cl. Prereq: 651 permission of instructor.

**850 Internship in Educational Research and Development G 3-12**

Internship experiences in research, development, or evaluation settings.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs, including cr hrs in Ed-T&P 850.

**851 Evaluation Methods: Principles of Needs Assessment I G 3**

Introduction to the concept of need, issues in needs assessment, and types of needs assessment strategies with a special emphasis on basic techniques and procedures. Altschuld.

1 2½-hr cl. Prereq: 765 or Ed T&P 765 or permission of instructor. Not open to students with credit for Ed-T&P 863.

**852 Evaluation Methods: Principles for the Evaluation of Professional Personnel in Education G 3**

Designed to help people to manage the design, implementation, and evaluation of performance appraisal and review systems in educational organizations. Haefele.

Wi Qtr. 1 2½-hr cl. Ed-T&P 765 recommended.

**853 Evaluation Methods: Principles of Needs Assessment II G 3**

A brief overview of needs assessment followed by an inspection of in-depth needs assessment, procedures used in education, agencies, and business/industry settings. Altschuld.

Sp Qtr. 1 2½-hr cl. Prereq: 765 or 851 or Ed-T&P 765 or Ed-T&P 863 or permission of instructor.

**854 Evaluation Methods: Principles and Techniques for the Evaluation of Teaching and Teachers G 3**

Designed to help people manage the design, implementation, and evaluation of performance appraisal and review systems in educational organizations. Haefele.

1 2½-hr cl. Prereq: 765 or Ed-T&P 765 recommended.

**862 Rehabilitation Case Management G 3**

An in-depth analysis of the vocational rehabilitation topics of case management, agency functioning, and the adaptation of counseling models and techniques for use with persons with disabilities.

Wi Qtr. 1 2½-hr cl. Prereq: 774 and 790.

**864 Reactions and Adjustment to Disability G 3**

A study of individual reactions to various disabling conditions, the adjustment process, cultural norms and expectations, and responses to the rehabilitation process.

Sp Qtr. 1 2½-hr cl.

**867 Educational Experimentation G 2-5**

Analysis of contribution of selected experiments to elementary, secondary, and higher education; design of experimental method for attacking educational problems.

1 2-hr lab, conf arr. Prereq: 785 or Ed-T&P 785, and 15 cr hrs of grad work in educ. Repeatable to a maximum of 5 cr hrs, including cr hrs in Ed-T&P 867.

**875 Consultation in the Human Services Profession G 3**

The consultation process, models, roles, skills, and outcomes for human services personnel will be addressed; emphasis is placed on extending theoretical and practical knowledge. Collins and Miranda.

1 3-hr cl, and field experience. Prereq: 773, 774, 775, grad standing, and/or permission of instructor.

**876 Organization and Administration of Guidance Services G 3**

The selection, organization, and presentation of guidance materials, including analysis of types of organization, methods of initiating a guidance program, and types of in-service programs. Sears.

3 cl. Prereq: 773 or equiv.

**884 Planned Field Experience G 3-15**

Planned counseling, supervisory, assessment, or teaching experience in a public school or other human service setting under supervision.

Prereq: Written permission of area adviser. Repeatable to a maximum of 15 cr hrs, including cr hrs in Ed-T&P 884.60.

**884.14 Severe Behavior Disabilities****884.25 Rehabilitation Services****884.34 Counselor Education**

200-400 contact hrs/qtr.

**884.47 General Special Education**

100 contact hrs.

**884.48 Multiple Disabilities**

100 contact hrs. This course is graded S/U.

**884.52 Visual Disabilities**

100 contact hrs. This course is graded S/U.

**884.54 Developmental Disabilities**

100 contact hrs. The grade of "P" (progress) will be issued for the first three quarters of enrollment; a grade will be issued upon completion of the fourth quarter of enrollment.

**884.55 Hearing Disabilities**

100 contact hrs. This course is graded S/U.

**884.58 Orthopedic Disabilities**

100 contact hrs.

**884.60 Educational Research and Evaluation****884.61 Child Study****884.62 Specific Learning Disabilities****884.63 School Psychology****884.64 Remedial and Clinical Reading****884.66 Gifted****884.67 Special Education Administration****885 Supervised Teaching in Special Education G 3-15**

Student teaching for qualified students in the area of special education.

Au, Wi, Sp Qtrs. 300 field contact hrs/qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**885.14 Severe Behavior Disabilities****885.48 Multiple Disabilities****885.52 Visual Disabilities****885.54 Developmental Disabilities****885.55 Hearing Disabilities****885.58 Orthopedic Disabilities****885.62 Specific Learning Disabilities****885.66 Gifted****893 Advanced Individual Studies G 1-4**

Su, Au, Wi, Sp Qtrs. Arr. Plan A: not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree; Plan B: not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. Repeatable. These courses are graded S/U.

**893.14 Severe Behavior Disabilities****893.25 Rehabilitation Services****893.34 Counselor Education****893.47 General Special Education****893.48 Multiple Disabilities****893.52 Visual Disabilities****893.54 Developmental Disabilities****893.55 Hearing Disabilities****893.58 Orthopedic Disabilities****893.62 Specific Learning Disabilities****893.63 School Psychology****893.64 Remedial and Clinical Reading****893.66 Working With the Gifted****893.67 Special Education Administration****894 Advanced Group Studies G 1-5**

Advanced group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**894.48 Multiple Disabilities****894.55 Hearing Disabilities****894.67 Special Education Administration****925 Seminars G 2-5**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Research problems in:

**925.25 Rehabilitation Services****925.34 Counselor Education****925.47 General Special Education****925.48 Multiple Disabilities****925.52 Visual Disabilities****925.54 Developmental Disabilities****925.55 Hearing Disabilities****925.60 Educational Research and Evaluation**

This course is graded S/U.

**925.61 Child Study****925.62 Specific Learning Disabilities****925.66 Gifted****926 Doctoral-level Professional Seminars in Counselor Education G 3**

Doctoral-level professional seminars covering a range of topics in professional counseling with emphasis on new developments in the theory, practice, and research of counseling.

**926.01 Advanced Interventions I: Diagnosis and Intervention in Counseling**

An in-depth exploration of analytical, cognitive, behavioral, and humanistic approaches to the diagnosis and treatment of five major mental and emotional disorders: organic, psychotic, affective, dissociative, and somatoform.

Au Qtr. 1 2½-hr cl.

**926.02 Advanced Interventions II: Brief Approaches to Counseling**

An exploration of brief psychodynamic approaches to the diagnosis and treatment of five major mental and emotional disorders: personality, impulse control, anxiety, substance induced and substance use, and psychosexual.

Wi Qtr. Prereq: 926.01; Psych 860, 866.01, or equiv, and Psych 867.01.

**926.03 Advanced Interventions III: Contemporary Systems of Counseling**

An extensive exploration of the theories and applications of classical and contemporary approaches to counseling; emphasis is placed on the use of hypnosis and sensory imagery approaches to behavioral change.

Sp Qtr. Prereq: 926.02; Psych 860, 866.01 or equiv, or 867.01.

**926.04 Critical Research Issues in Counselor Education, Supervision, and Practice**

An exploration of critical issues in the principles of research as they apply to school, mental health, and rehabilitation counseling.

Sp Qtr. Prereq: ED-T&P and/or ED-T&P 786 or their equivalents.

**926.05 Helping Strategies in Career Counseling**

An examination of the skills necessary for individual and group career counseling.

Sp Qtr. 1 2½-hr cl. Prereq: Psych 884.01, PhD standing or permission of instructor.

**926.06 Legal, Professional, and Ethical Issues in Counseling**

An examination of current legal, professional, and ethical issues in counseling.

Au Qtr. Prereq: PhD standing or permission of instructor.

**926.07 Theories of Counselor Supervision**

Knowledge and skills required for counselor supervision with emphasis on generic models, the supervisory relationship, and major theories.

Wi Qtr. Prereq: PhD standing or permission of instructor.

**926.08 Leadership Roles in Professional Counseling**

An exploration of leadership strategies as applied to human service delivery systems in which counselors function.

Wi Qtr. Prereq: PhD standing or permission of instructor.

**926.09 Advanced Theory and Intervention of Group Counseling G 3**

Major group counseling theories, the group counseling relationship, and therapeutic factors; professional and ethical issues as well as current research will be covered.

Wi Qtr. 1 2½-hr cl. Prereq: 774, 775, 800.01, 800.02, 974, 975, or equivalents, and permission of instructor.

**927 Family Counseling G 3**

Introduction to basic approaches, concepts, and techniques of family counseling; the relationship between individual group, and family counseling will be considered.

Su Qtr. 1 2½-hr cl. Prereq: Permission of instructor.

**928 Substance Use and Abuse Counseling G 3**

Techniques of substance use and abuse counseling emphasizing strengthening of individual and group counseling skills; drugs and their effects on individuals and families will also be covered.

Sp Qtr 1 2½-hr cl. Prereq: Permission of instructor.

**930 Applied Evaluation Design G 3**

Techniques for planning, implementing, and reporting the evaluation of programs in varied educational settings.

Sp Qtr. 1 2-hr cl. Prereq: 765 or Ed-T&P 765 Ed-T&P 785 or equivalents or permission of instructor. Not open to students with credit for Ed-T&P 930.

**966 Practicum in Educational Research and Evaluation G 3**

The utilization of research strategies and evaluation techniques in studying educational problems with emphasis upon the development, conduct, and completion of individual projects.

3 cl. Prereq: Previous courses in the basic sequence in educational research or evaluation or permission of instructor. Not open to students with credit for Ed-P&L 966 or Ed-T&P 966. Cross-listed in Educational Policy and Leadership. This course is graded S/U.

**974 Supervised Practice in Individual Counseling: Children G 3**

Counseling techniques unique to elementary age children including play media and conceptualizing the environmental press on the child.

1 2½-hr cl. Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**975 Supervised Practice in Group Counseling: Children G 3**

Supervision of each enrollee who counsels with a group of children of elementary age in a school or other institutional setting.

1 2½-hr cl. Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**976 Supervised Practicum in Individual Counseling: Adolescent, Youth, and Adult G 3**

Supervised practice in counseling individual clients of adolescent to adult age; emphasis on developing counseling skills, including: counseling relationship; conceptualizing clients; self-understanding.

1 2½-hr cl. Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**977 Supervised Practice in Group Counseling: Adolescent, Youth, and Adult G 3**

Supervision of each enrollee who counsels with a group of adolescents, youths or adults in a school or other institutional setting.

1 2½-hr cl. Minimum 30 contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**978 Supervised Field Experience in Counseling G 3**

Supervised practice in guidance and counseling activities in the work setting; emphasis on the range of activities performed by guidance workers in school and related settings.

1 2½-hr cl. Rehabilitation Services—100 field contact hrs; Counselor Education—minimum 20-40 field contact hrs. Prereq: 773 and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**979 Supervised Practicum in Rehabilitation Services G 3**

Faculty-supervised rehabilitation counseling services within an approved rehabilitation agency.

Au, Wi, Sp Qtrs. 1 2-1/2-hr cl and 10 hrs supervised field experience during the qtr. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**986 Developmental Assessment I G 3**

Use of testing and observational techniques in developmental assessment with major emphasis on collecting and evaluating data related to global cognitive and affective functioning. Naglieri.

1 3-hr cl. Prereq: Permission of instructor.

**987 Developmental Assessment II G 3**

Continuation of 986, with emphasis on the techniques developed to assess specific abilities and disabilities for educational planning. Naglieri.

1 3-hr cl. Prereq: Permission of instructor.

**988 Developmental Assessment III G 3**

Continuation of 987, with emphasis on the analysis, synthesis, and interpretation of data. Naglieri.

1 3-hr cl. Prereq: Permission of instructor.

**989 Developmental Assessment IV G 3**

Continuation of 988, with emphasis on intervention and the evaluation of intervention techniques. Collins.

1 3-hr cl. Prereq: Permission of instructor.

**990 Supervised Practice in Developmental Assessment G 3**

Assessment of limited numbers of children within a school setting and under close supervision, emphasis on global techniques, specific techniques, educational planning, and counseling with children, teachers, and parents. Collins, Miranda, and Naglieri.

Su, Au, Wi, Sp Qtrs. 300 clock hrs over 4-qtr sequence. No clock hrs for 986-990. Prereq: Permission of instructor; must be taken concurrently with one of the following: 986, 987, 988, or 989. Repeatable to a maximum of 21 cr hrs.

**991 School Psychologist in American Schools G 3**

Overview of trends and issues confronting the professional school psychologist; establishing and maintaining a program of school psychological services.

Sp Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**992 Internship in Child Study G 3, 6, 9, or 12**

Professional experiences planned by the student, staff member, and local school supervisor. Collins, Miranda, and Naglieri.

Au, Wi, Sp Qtrs. 1,200 clock hrs for 3-qtr sequence. Prereq: Permission of instructor. Limited to select PhD and post-master's students specializing in school psychology. Repeatable to a maximum of 36 cr hrs.

**995 Doctoral-level Internship in Counseling G 3-15**

Supervised internship in professional counseling for doctoral-level students in educational, mental health, or related settings.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: PhD standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**999 Research G Arr 1-18**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**999.14 Severe Behavior Disabilities****999.25 Rehabilitation Services****999.34 Counselor Education****999.47 General Special Education****999.48 Multiple Disabilities****999.52 Visual Disabilities****999.54 Developmental Disabilities****999.55 Hearing Disabilities****999.58 Orthopedic Disabilities****999.60 Educational Research and Evaluation****999.61 Child Study****999.62 Specific Learning Disabilities****999.63 School Psychology****999.64 Remedial and Clinical Reading****999.66 Gifted****999.67 Special Education Administration**

## Educational Studies: Humanities, Science, Technological, and Vocational

227 Arps Hall, 1945 North High Street, 292-2332.

Ed-Stds 697, 698, 700.01-700.07, 727, and 925.50 may be offered by any of the program areas listed below.

### 697 Study at a Foreign Institution U G 1-15

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

### 698 Study Tour U G 1-15

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable to different titled study tours only.

#### 698.01 Domestic

#### 698.02 Foreign

### 700 Interprofessional Education

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

Repeatable to a maximum of 9 cr hrs; subdivisions not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Cross-listed in Educational Policy and Leadership, Educational Theory and Practice, Educational Services and Research, Health Education, Physical Education, and Recreation Education.

#### 700.01 Seminar on Interprofessional Care U G 3

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

#### 700.02 Changing Societal Values U G 3

Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.

#### 700.03 Seminar on Ethical Issues Common to the Helping Professions U G 3

Ethical issues of concern to the professions and arising out of advanced technology; euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.

#### 700.04 Interprofessional Practicum in Clinical Settings U G 3, 5

Interprofessional teamwork in clinic settings.

Prereq: Permission of instructor.

#### 700.05 Interprofessional Seminar in Policy Analysis U G 3

Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.

3 cl. Prereq: Permission of instructor.

#### 700.06 Care of Chemically Dependent Families U G 3

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

#### 700.07 Interprofessional Approaches to Child Abuse and Neglect G 3

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

1 2½-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

### 727 Special Topics in Education P G 1-5

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or registration in one of the professional schools. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

#### 727.09 Speech/Theatre Education

#### 727.21 Industrial Technology Education

#### 727.25 English Education

#### 727.27 Science Education

#### 727.28 Social Studies Education

#### 727.30 Vocational-Technical Education

#### 727.33 Adult Education

#### 727.45 Foreign Language Education

#### 727.50 Educational Studies

The courses in the Department of Educational Studies are listed by program area.

### 925.50 Seminar: Multidisciplinary Topics G 2-5

Advanced seminar on multidisciplinary topics.

Su, Au, Wi, Sp Qtrs. 1 2½-hr cl. Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

## Adult Education

325 Ramseyer Hall, 29 West Woodruff Avenue, 292-5037

### 648 Adult Literacy Education U G 3

Historical/social context of current adult basic education issues and practices related to participation, instructional processes, program planning, evaluation, and research needs.

Sp Qtr. 1 3-hr cl.

### 649 General Methods in Adult Education U G 3

Selection, integration, and evaluation of methods, techniques, and devices to facilitate the learning of adults.

Wi Qtr. 1 2½-hr cl. Not open to students with credit for Ed-P&L 649.

### 672 Introduction to Adult Education U G 3

The nature, extent, and significance of adult education; history and types of adult education; theoretical issues; adult learning and methodology; present trends and future developments.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing; for EDU majors: Ed-T&P 451 or Ed-T&P 461. Not open to students with credit for Ed-P&L 672.

### 673 Parent Education U G 3

Nature, extent, and significance of the parent education movement; home and school relationships; methods and resources; training professionals and lay leaders; local and state programs.

1 2½-hr cl. Prereq: 4th yr standing; for EDU majors: Ed-T&P 451 or Ed-T&P 461. Not open to students with credit for Ed-P&L 673.

### 674 Continuing Education in the Retirement Years U G 3

Designed to provide knowledge about older adults' learning needs, available resources, and pertinent legislation; emphasis on helping older learners contribute positively to society. Boggs.

Sp Qtr. 1 2½-hr cl. Prereq: Permission of instructor for undergrads. Not open to students with credit for Ed-P&L 674.

### 692 Workshops U G 1-8

#### 692.33 Adult Education

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs, including cr hrs in Ed-P&L 692.33.

### 693 Individual Studies U G 1-4

#### 693.33 Adult Education

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergraduate students, or 15 cr hrs for the masters degree and 30 cr hrs for the doctoral degree. This course is graded S/U.

### 694 Group Studies U G 1-5

#### 694.33 Adult Education

Group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-P&L 694.33.

### 884.33 Planned Field Experience G 1-20

Prereq: Written permission of area adviser. Repeatable to a maximum of 20 cr hrs including cr hrs in Ed-P&L 884.30.

### 893.33 Advanced Individual Studies in Adult Education G 1-4

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Not more than 15 cr hrs of any 893 and/or any 893 will apply toward the master's degree; not more than 30 cr hrs will apply to the doctoral degree. Repeatable. This course is graded S/U.

### 925 Seminars G 2-5

#### 925.33 Adult Education

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

### 931 Theory and Practice of Discussion in Adult Education G 3

Perspectives of adult learning via discussion; analysis of research on group discussion; principles of discussion oriented adult learning; application of group discussion to problem solving.

Wi Qtr. 1 2½-hr cl. Not open to students with credit for Ed-P&L 931.

**932 Adult Characteristics and Learning Theory G 3**

Examination of significant learning theories and their applicability to adult learning experiences.

Au, Sp Qtrs. 1 2½-hr cl. Prereq: 672 or permission of instructor. Not open to students with credit for Ed-P&L 932.

**933 Internship in Adult Education G 9**

Su, Au, Wi, Sp Qtrs. Prereq: 672 and 12 cr hrs of grad work in adult education. Repeatable to a maximum of 18 cr hrs, including cr hrs in Ed-P&L 933. Limited to PhD majors in adult education and selected master's candidates with major in adult education.

**934 Organization and Administration of Adult Education Programs G 3**

The administrative functions within adult education agencies: decision making, staff development, financing, evaluating, and improving adult education programs. Boggs.

Au Qtr. 1 2½-hr cl. Prereq: 672 and written permission of instructor. Not open to students with credit for Ed-P&L 934.

**935 Program Planning in Adult Education G 3**

Prepares educators to implement components in planning educational programs for adults: assessing needs, setting objectives, selecting and training staff, choosing instructional strategies, promotion, and evaluation. Boggs and Freer.

Wi Qtr. 1 2½-hr cl. Prereq: 672 or Ed-P&L 672 or equiv. Not open to students with credit for Ed-P&L 935.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**999.33 Adult Education****English Education**

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**294.25 Group Studies U 1-5**

Group studies for students in specialized programs.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs in Ed-T&P 294.10, 294.56, and 294.70; and Ed-T&P 294.09 and 294.45 and Ed-P&L 294.

**535 Fundamentals of Secondary Reading Instruction U 3**

Principles, methods, and materials of reading instruction in secondary schools.

3 cl. Not open to students with credit for Ed-T&P 535.

**560 Teaching the Reading of Literature U 4**

The objectives of the literature program and techniques for developing appreciation and improving skills in the reading of various types of prose and poetry.

4 cl. Prereq: Ed-T&P 451. Not open to students with credit for Ed-T&P 560.

**561 Teaching Language and Composition in Secondary Schools U 4**

The role of grammar and linguistics in the English program and techniques for the teaching of oral and written expression in high school.

4 cl. Prereq: Ed-T&P 451. Not open to students with credit for Ed-T&P 561.

**587.25 Student Teaching in Secondary Schools U 3-15**

Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.

Prereq: EDU 4th yr standing, 560 or Ed-T&P 560, 561 Ed-T&P 561, and permission of program coordinator. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to 15 cr hrs. For additional information see College of Education Bulletin. This course is graded S/U.

**589 Laboratory Experiences in English Education U 1-3**

A field-based laboratory designed to provide tutoring, materials development, test construction and evaluation, appraisal, and instructional planning experiences within the English curriculum.

Arr. Prereq: Ed-T&P 451. Repeatable to a maximum of 15 cr hrs, including cr hrs Ed-T&P 589. May be taken concurrently with one of the following: 535, 560, 561, 612, or 656.

**612 Linguistic Materials for Teachers U G 3**

Study of linguistic systems, language acquisition, and sociolinguistics as they bear on the work of classroom teachers.

Not open to students with credit for Ed-T&P 612.

**656 Literature for Adolescents U G 3**

Literature for individual, group, and whole-class reading in junior and senior high schools; interest factors, readability, and literary value as criteria for selection; bibliographic aids.

Prereq: Ed-T&P 451. Not open to students with credit for Ed-T&P 656.

**681 Special Topics in English Education U 3**

Exploration of topics and their interrelationships; integration of prereq and concur courses with field experiences.

3-5 hr. Repeatable to a maximum of 18 cr hrs including cr hrs in Ed-T&P 681.01, 681.02, 681.03, 681.04 and 681.05; with not more than 6 cr hrs in a single decimal subdivision.

**681.01 Consequences of Literacy**

An investigation of the relationship between literacy and learning.

Prereq or concur: 535 or Ed-T&P 535 or Ed-T&P 561; Anthropol 630; and permission of instructor.

**681.02 Language and Learning**

An investigation of the relationship between language and society, language and culture, and language and learning.

Prereq or concur: 589 or Ed-T&P 589; Ed-T&P 665; Anthropol 630; and permission of instructor.

**681.03 Classroom Community**

A study of human relations and community context as related to the English classroom.

Prereq or concur: Anthropol 620.07; Ed-P&L 615 and permission of instructor.

**681.04 Multicultural Materials for English Teachers**

An exploration of the range of available literary materials representing cultural diversity, and folkloristic and ethnographic methods related to multicultural education.

Prereq or concur: 560 or Ed-T&P 560; Anthropol 630; English 270; and permission of instructor.

**681.05 Individualizing and Evaluating Language Arts Instruction**

Study of practical methods and structures which relate instruction to individual abilities and interests; overview of the field of evaluation.

Prereq or concur: 561 or Ed-T&P 561, 675 or or Ed-P&L 675 or Ed-Excep 665, and permission of instructor.

**692.25 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs, including cr hrs in Ed-T&P 692.10, 692.56, and 692.70; Ed-T&P 692.43; Ed-T&P 692.09, 692.25, 692.28, and 692.45; Ed-T&P 692.21; Ed-T&P 692.26 and 692.27; and Ed-P&L 692.22, 692.23, 692.29, and 692.30.

**693.25 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30 cr hrs for the doctoral degree. These courses are graded S/U.

**694.25 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-T&P 694.10, 694.56, and 694.70; Ed-T&P 694.36, 694.43, and 694.46; Ed-T&P 694.21, and Ed-P&L 694.22, 694.23, 694.29, and 694.30.

**856 Advanced Literature for Adolescents G 3**

An evaluation of literature for adolescents and the role it plays in the education of youth.

1 3-hr cl. Prereq: Teaching experience. Not open to students with credit for Ed-T&P 856.

**873 Popular Culture and the Teaching of English G 3**

Analysis of the role of mass media/popular culture in our society; values and themes in popular culture; development of critical skills to analyze popular culture. Mertz.

1 3-hr cl. Not open to students with credit for Ed-T&P 873.

**884.25 Planned Field Experience G 1-20**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser. Repeatable to a maximum of 20 cr hrs including cr hrs in Ed-T&P 884.10, 884.56, and 884.70; Ed-T&P 884.36, 884.43, 884.46, and 884.60; Ed-T&P 884.09, 884.25, 884.28, and 884.45; Ed-T&P 884.21; Ed-T&P 884.26 and 884.27; and Ed-P&L 884.30.

**893.25 Advanced Individual Studies in English Education G 1-4**

Su, Au, Wi, Sp Qtrs. Arr. Not more than 15 cr hrs of any 893 and/or 893 will apply toward the Master's degree; not more than 30 cr hrs will apply to the doctoral degree. Repeatable. This course is graded S/U.

**925.25 Seminars G 2-5**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

**970 English Curriculum Language and Composition G 3**

An evaluation of current trends and developments in linguistics and composition instruction and their relevance for the English curriculum.

3 cl. Not open to students with credit for Ed-T&P 970.

## 124 Educational Studies: Humanities, Science, Technological, and Vocational

### 971 English Curriculum: Literature G 3

Critical examination of trends in the secondary school literature program. Not open to students with credit for Ed-T&P 971.

### 972 English Curriculum: Studies in the Teaching of Literature G 3

Role of literary theory and aesthetics in English curriculum development; study of the relation of literature to the other arts. Not open to students with credit for Ed-T&P 972.

### 999.25 Research G Arr

Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

## Foreign Language Education

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### 289.45 Field Experience U 2-5

Professional service with children or youth in a school or community agency. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-T&P 289.02 and 289.70; Ed-T&P 289.09 and 289.45; Ed-T&P 289.21; and Ed-P&L 289. This course is graded S/U.

### 294.45 Group Studies U 1-5

Group studies for students in specialized programs.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs in Ed-T&P 294.10, 294.56, and 294.70; Ed-T&P 294.09 and 294.45; and Ed-P&L 294.

### 586 Elementary School Student Teaching in Foreign Languages U 3

Observation, participation, and responsible teaching of a foreign language in an elementary school; conferences or seminars.

Prereq: 617 or Ed-T&P 617. Repeatable to a maximum of 6 cr hrs, including cr hrs in Ed-T&P 586. This course is graded S/U.

### 587.45 Student Teaching in Secondary Schools U 3-15

Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.

Prereq: EDU 4th yr standing and permission of program coordinator. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to 21 cr hrs. For additional information see the College of Education Bulletin. This course is graded S/U.

A— French  
B— Spanish  
C— German  
D— Russian  
E— Latin  
F— English

### 615 Teaching of Modern Foreign Language I U G 4

Theory and practice of teaching foreign language in beginning classes; use and preparation of instructional materials based on research studies.

Au Qtr. 2 2-hr cl. Prereq: 289.45, Ed-T&P 451.

### 616 Teaching of Modern Foreign Language II U G 4

Study of the use of new instructional materials for intermediate and advanced foreign language classes; teaching of reading, writing, literature, and culture; evaluation.

Au Qtr. 2 2-hr cl. Prereq: 615 or Ed-Hums or Ed-T&P 615.

### 617 Teaching of Foreign Languages in the Elementary School U G 4

Skill development in teaching of spoken and written foreign languages on the elementary school level; construction and use of suitable materials; discussion of issues and problems, evaluation.

Prereq: 15 cr hrs of educ and written permission of instructor. Not open to students with credit for Ed-T&P 617.

### 618 Teaching of Latin U G 4

Values, teachers' equipment, objectives, and methods; classroom procedures; lectures and assigned readings.

3 cl, lab arr. Prereq or concur: Ed-T&P 451, Latin 201 and 202, and an additional 6 cr hrs in Latin. Not open to students with credit for Ed-T&P 618.

### 619 Foreign Language Education Residence in Europe U G 2-5

Practicum in language, language teaching, history, and culture in a foreign country; each student lives with a family, and participates in instruction-related activities and in the study of social and cultural differences.

Prereq: Written permission of instructor; preregistration Au Qtr. Repeatable to a maximum of 30 cr hrs including cr hrs in Ed-T&P 619.11 and 619.12.

### 640 Methods and Techniques of Teaching English to Speakers of Other Languages U G 4

Study of the use of new instructional materials for intermediate and advanced TESOL classes; teaching of reading, writing, literature, and culture; evaluation.

2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for Ed-T&P 616.15 or 620.

### 692.45 Workshops U G 1-8

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs, including cr hrs in Ed-T&P 692.10, 692.56 and 692.70; Ed-T&P 692.43; Ed-T&P 692.09, 692.25, 692.28, and 692.45; Ed-T&P 692.21; Ed-T&P 692.26 and 692.27; and Ed-P&L 692.22, 692.23, 692.29, and 692.30.

### 693.45 Individual Studies U G 1-4

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30 cr hrs for the doctoral degree. These courses are graded S/U.

### 694.45 Group Studies U G 1-5

Group studies on special problems in education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-T&P 694.10, 694.56, and 694.70; Ed-T&P 694.36, 694.43, and 694.46; Ed-T&P 694.09, 694.25, 694.28, and 694.45; Ed-T&P 694.21 and Ed-T&P 694.26 and 694.27; Ed-P&L 694.22, 694.23, 694.29, and 694.30.

### 703 Studies in TESOL and Bilingual Education U G 3

Studies of the theories underlying the teaching and learning of English as a second language and bilingual education; analyses of curricular designs and innovative programs.

1 3-hr cl. Prereq: Jr standing. Not open to students with credit for Ed-T&P 703.

### 710 Selecting and Developing Second Language Instructional Materials U G 3

Selection and development of second language instructional materials including theoretical considerations and practical applications; evaluation of instructional materials, creating materials, and adapting materials to student needs.

1 3-hr cl. Prereq: 615 or Ed-T&P 615 or permission of instructor. Not open to students with credit for Ed-T&P 710.

### 715 Bilingual Education Testing U G 3

General theories of measurement as applied to bilingual education; in-depth discussion of standardized tests that evaluate the language dominance and proficiency of children in bilingual education programs.

2 3-hr cl for 5 wks. Prereq: Jr standing or above, or permission of instructor. Not open to students with credit for Ed-T&P 715.

### 725 Teaching Advanced Foreign Language Courses U G 3

The teaching of language skills and aesthetic appreciation in advanced foreign language classes; emphasis on teaching interdisciplinary studies: literature, history, fine arts, music, and architecture.

Sp Qtr. 1 2 1/2-hr cl. Prereq: At least one French or Spanish course at the 600 level.

### 801 Teaching Foreign Language at the College Level G 5

Methods and techniques for teaching foreign language at the college level.

Two wks intensive workshop previous to qtr followed by a 2 hr wkly cl. Prereq: Teaching associate in the Dept of Romance Languages and Literatures or permission of instructor. For students enrolled in these courses, the minimum number of credit hours required for graduation is increased by 5, 10, or 15 hrs.

#### 801.01 French

Not open to students with credit for French 801. Cross-listed in French as 801.

#### 801.02 Italian

Not open to students with credit for Italian 801. Cross-listed in Italian as 801.

#### 801.03 Spanish

Not open to students with credit for Spanish 801. Cross-listed in Spanish as 801.

### 868 Developing Syllabi for Second-Language Programs G 3

Focus on various models currently available to second language teachers for syllabus design, development, and evaluation.

Wi Qtr. 2 1/2-hr cl.

**884.45 Planned Field Experience G 1-20**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser. Repeatable to a maximum of 20 cr hrs including cr hrs in Ed-T&P 884.10, 884.56, and 884.70; Ed-T&P 884.36, 884.43, 884.46, and 884.60; Ed-T&P 884.09, 884.25, 884.28, and 884.45; Ed-T&P 884.21; Ed-T&P 884.26 and 884.27; and Ed-P&L 884.30.

**893.45 Advanced Individual Studies in Foreign Language Education G 1-4**

Su, Au, Wi, Sp Qtrs. Arr. Not more than 15 cr hrs of any 693 and/or 893 will apply toward the Master's degree; not more than 30 cr hrs will apply to the doctoral degree. Repeatable. This course is graded S/U.

**925.45 Seminars G 2-5**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

**960 Analysis of the Reading Process in a Second Language G 5**

Focus on the theoretical and data-based processes of comprehending natural written second language discourse.

Wi Qtr. 2-2-hr cl, 1 hr lab. Prereq: Ed-S&R 785 or equiv.

**962 Seminar in Foreign Language Education G 4**

Analysis of major research studies and projects; evaluation and implications of findings; research considerations unique to foreign language education. Jarvis.

Su Qtr. 1 3-hr cl; 1 lab arr. Prereq: Written permission of instructor. Not open to students with credit for Ed-T&P 962.

**963 Foreign Language Testing G 4**

Theory and practice of foreign language test construction including item writing, item analysis, reliability, validity, scoring, and interpretation.

Sp Qtr. 2-2-hr cl. Prereq: Permission of instructor. Not open to students with credit for Ed-T&P 963.

**999.45 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**Science Education**

249 Arps Hall, 1945 North High Street, 292-5381

**489 Advanced Field Experience in Science Education U 3-5**

Directed field experience emphasizing appropriate teaching strategies for different school-age children and school settings.

2 hrs field experience/cr hr, 1 2-hr seminar. Prereq: Admission to EDP and to science teacher education program. Repeatable to a maximum of 15 cr hrs, including cr hrs in Ed-T&P 489.01, 489.02, and 489.03; subdivisions not repeatable.

**489.01 Middle School-Jr High School Tutorial**

Middle or junior high school science program with emphasis on tutoring a student(s) in science.

Au, Wi Qtrs.

**489.02 Elementary School Program**

Planning, preparing, and teaching science to elementary school-age children.

Au, Wi Qtrs.

**489.03 Secondary School Science Classes and Laboratories**

Experience in appropriate secondary school science classroom and laboratory with emphasis on acquiring skills to develop, prepare, conduct, and evaluate laboratory experiences.

Sp Qtr. Prereq: 489.02 or Ed-T&P 489.02 or permission of instructor; concur 551.

**490 Foundations for Teaching and Learning Science U 5**

2 3-hr cl. Prereq: Admitted to jr program in science education.

**490.01 Foundations for Teaching and Learning Science I**

Relationships and interactions between human development and cultural diversity, and application of this knowledge to the teaching and learning of science.

Au Qtr.

**490.02 Foundations for Teaching and Learning Science II**

Development and implementation of curricula, improvement of instruction and classroom management, and evaluation of learners and of the science program.

Wi Qtr. Prereq: 490.01.

**494.27 Special Group Studies U 1-5**

Group studies for students in specialized programs.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs in Ed-T&P 494.21 and Ed-T&P 494.26 and 494.27.

**551 Science in Secondary Schools U 4**

Objectives, problems and procedures, preparing teaching plans, use of demonstrations, experiments, and projects, science curriculum and evaluation, instruments and procedures, texts and reference materials.

4 cl. Prereq: Permission of program coordinator or instructor. Not open to students with credit for Ed-T&P 551.

**587.27 Student Teaching in Secondary Schools U 3-15**

Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.

Prereq: EDU 4th yr standing and permission of program coordinator. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to 21 cr hrs. For additional information see the College of Education Bulletin. This course is graded S/U.

**611 Great Lakes Education Workshop U G 1-4**

Techniques and curricula for presenting interdisciplinary aspects of the oceans and Great Lakes in formal and informal education settings. Fortner and Mayer.

Sp Qtr. 10 hrs cl per cr, 1 1/2 days per cr, 10 4-hr cl. Prereq: Teaching certificate or sr standing. Not open to students with credit for Nat Res 691 or 611 or Educ 727-Sea Grant. Repeatable to a maximum of 5 cr hrs. Cross-listed with Natural Resources.

**613 Methods for Conservation Education U G 3**

Experience centered course for conservation/natural resources education including objectives, instructional, and evaluative procedures appropriate to formal and non-formal settings. Roth and Helgeson.

Sp Qtr. 1 3-hr cl. Prereq: Sr or grad standing. Not open to students with credit for Ed-T&P 613 or Nat Res 613. Cross-listed in Natural Resources.

**614 Marine and Aquatic Education U G 3**

Overview of oceanic and Great Lakes resources, their functions in history, climate, commerce, and culture, and the school curriculum.

1 3-hr cl, field trips. Prereq: 20 cr hrs of social, physical, and/or biological sciences or teacher certification, and permission of instructor. Not open to students with credit for Ed-T&P 614 or Nat Res 614. Cross-listed in Natural Resources. Travel and subsistence costs for field trips must be borne by students.

**636 Practicum in Science for Teachers U G 3**

Use and design of apparatus, demonstrations, and experiments for general science, chemistry, biology, and physics, with special emphasis on modern secondary school instructional materials in the sciences.

Au Qtr. 3 2-hr cl. Prereq: Permission of program coordinator or instructor. Not open to students with credit for Ed-T&P 627.

**689 Middle and Senior High School Science Field Experience U G 6**

Experience in appropriate school science classes with an emphasis on acquiring skills to work with students in a school setting while developing skills in preparing, conducting, and evaluating teaching activities.

Su Qtr. 3 hrs/day for 5 days/wk for 8 wks. Prereq: Admission to the post-degree program in science education and concur: 551 or 546. Not open to students with credit for Ed-T&P 689.

**692.27 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs, including cr hrs in Ed-T&P 692.10, 692.56 and 692.70; Ed-T&P 692.43; Ed-T&P 692.09, 692.25, 692.28, and 692.45; Ed-T&P 692.21; Ed-T&P 692.26 and 692.27; and Ed-P&L 692.22, 692.23, 692.29, and 692.30.

**693.27 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30 cr hrs for the doctoral degree. These courses are graded S/U.

**694.27 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-T&P 694.10, 694.56, and 694.70; Ed-T&P 694.36, 694.43, and 694.46; Ed-T&P 694.09, 694.25, 694.28, and 694.45; Ed-T&P 694.21; Ed-T&P 694.26 and 694.27; and Ed-P&L 694.22, 694.23, 694.29, and 694.30.

**721 Logic and Psychology in School Science U G 3**

A study of the nature of psychological growth and the development of logical ability in children and the implications for teaching science.

3 cl. Prereq: Teaching experience or written permission of instructor. Not open to students with credit for Ed-T&P 721.



**742 Supervision of School Science Programs U G 4**

For those concerned with supervision of teacher education programs in science; objectives, curricula, recent trends, classroom management, evaluation of teaching, and professional literature.

Su Qtr. 4 cl. Prereq: Teaching experience or permission of instructor. Not open to students with credit for Ed-T&P 742.

**752 Science in the School Curriculum U G 4**

Foundations for science curriculum; current development, planning, and evaluation procedures, research.

2 2-hr cl. Prereq: Teaching experience or permission of instructor. Not open to students with credit for Ed-T&P 752.

**772 Teaching Science in College U G 4**

An examination of college Bachelor's degree, teacher's certificate, and teaching science curricula; teaching methods; student and course evaluation techniques; objectives and rationale for teaching science in general education and teacher education programs.

2 2-hr cl. Prereq: Teaching experience or permission of instructor. Not open to students with credit for Ed-T&P 772.

**884.27 Planned Field Experience G 1-20**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser. Repeatable to a maximum of 20 cr hrs including cr hrs in Ed-T&P 884.10, 884.56, and 884.70; Ed-T&P 884.36, 884.43, 884.46, and 884.60; Ed-T&P 884.09, 884.25, 884.28, and 884.45; Ed-T&P 884.21; Ed-T&P 884.26 and 884.27; and Ed-P&L 884.30.

**893.27 Advanced Individual Studies in Science Education G 1-4**

Su, Au, Wi, Sp Qtrs. Arr. Not more than 15 cr hrs of any 693 and/or 893 will apply toward the Master's degree; not more than 30 cr hrs will apply to the doctoral degree. Repeatable. This course is graded S/U.

**894.27 Group Studies G 1-5**

Advanced group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**925.27 Seminars G 2-5**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

**999.27 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

***Social Studies Education***

249 Arps Hall, 1945 North High Street, 292-5381

**289.28 Field Experiences for Social Studies U 1-10**

Field experience for supplementing the social studies methods courses by observing and working with experienced teachers.

Su, Au, Wi, Sp Qtrs. 3 hrs each wk for each hr of cr. Repeatable to a maximum of 10 cr hrs.

**587.28 Student Teaching in Secondary Schools U 3-15**

Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.

Prereq: EDU 4th yr standing and permission of program coordinator. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to 15 cr hrs. For additional information see the College of Education Bulletin. This course is graded S/U.

**624 Social Education U G 3**

Analyses of social structures and processes in classroom grouping arrangements; teacher social roles, school traditions, ceremonies, clubs, and athletics.

1 2 1/2-hr cl. Prereq: Ed-T&P 451 or permission of instructor or teaching experience. Not open to students with credit for Ed-T&P 624.

**638 Teaching of Secondary Social Studies I U G 4**

Designed to help future social studies teachers conceptualize social studies and develop understanding of methods and materials for classroom instruction.

Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit Ed-T&P or Ed-Stds 526.

**639 Teaching of Secondary Social Studies II U G 4**

Trends, problems, issues, and instructional strategies in secondary social studies with emphasis on simulations, case studies, the media, role playing, controversial issues, and multicultural education.

Au, Wi, Sp Qtrs. 2 2-hr cl. Not open to students with credit Ed-T&P or Ed-Stds 527.

**692.28 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs, including cr hrs in Ed-T&P 692.10, 692.56, and 692.70; Ed-T&P 692.43; Ed-T&P 692.09, 692.25, 692.28, and 692.45; Ed-T&P 692.21; Ed-T&P 692.26 and 692.27; and Ed-P&L 692.22, 692.23, 692.29, and 692.30.

**693.28 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30 cr hrs for the doctoral degree. These courses are graded S/U.

**694.28 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-T&P 694.10, 694.56, and 694.70; Ed-T&P 694.36, 694.43, and 694.46; Ed-T&P 694.09, 694.25, 694.28, and 694.45; Ed-T&P 694.21; Ed-T&P 694.26 and 694.27; and Ed-P&L 694, 694.23, 694.29, and 694.30.

**878 Infusing Global Perspectives in Education G 3**

Rationales, conceptualizations, and strategies for infusing global perspectives in education.

Au, Wi, Sp Qtrs. 1 3-hr cl.

**881 Multicultural Education in the Social Studies G 3**

Sensitizes students to cultural diversity, and provides insights and instructional tools for dealing with cultural pluralism in the classroom.

Sp Qtr. 1 2 1/2-hr cl.

**882 Materials and Methods in the Social Studies G 3**

Study of recent innovations in teaching methodology in the social studies; review and evaluation of recently published teaching materials. Gilliom.

Wi Qtr. 1 2 1/2-hr cl. Not open to students with credit for Ed-T&P 882.

**883 Organization and Teaching of Social Studies G 5**

Study of problems encountered in the conceptualization, planning, and teaching of the secondary social studies methods course. Gilliom.

Au Qtr. 2 cl, 2 2-hr labs. Prereq: PhD standing in educ. Not open to students with credit for Ed-T&P 883.

**884.28 Planned Field Experience G 1-20**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser. Repeatable to a maximum of 20 cr hrs including cr hrs in Ed-T&P 884.10, 884.56, and 884.70; Ed-T&P 884.36, 884.43, 884.46, and 884.60; Ed-T&P 884.09, 884.25, 884.28, and 884.45; Ed-T&P 884.21; and Ed-P&L 884.30.

**893.28 Advanced Individual Studies in Social Studies Education G 1-4**

Su, Au, Wi, Sp Qtrs. Arr. Not more than 15 cr hrs of any 693 and/or 893 will apply toward the Master's degree; not more than 30 cr hrs will apply to the doctoral degree. Repeatable. This course is graded S/U.

**925.28 Seminars G 2-5**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

**982 Evaluation in Secondary Social Studies Education G 3**

Testing, measurement, and evaluation in secondary social studies; treatment of teacher-made standardized tests; discussion of reporting practices.

1 2 1/2-hr cl. Prereq: Certification in secondary social studies. Admission to grad specialization in secondary social studies. Not open to students with credit for Ed-T&P 982.

**985 Theories of Secondary Social Studies Education G 3**

Basic theories of secondary social studies education; discussion of subject-centered, emergent needs, citizenship, reflective, and discipline-oriented approaches.

1 2 1/2-hr cl. Prereq: Certification in secondary social studies. Admission to doctoral program in secondary social studies. Not open to students with credit for Ed-T&P 985.

**999.28 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

## Speech/Theatre Education

249 Arps Hall, 1945 North High Street, 292-5381

### 289.09 Field Experience: Speech and Radio-Speech U 2-5

Professional service with children or youth in a school or community agency. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-T&P 289.02 and 289.70; Ed-T&P 289.09 and 289.45; Ed-T&P 289.21; and Ed-P&L 289.

### 294.09 Group Studies U 1-5

Group studies for students in specialized programs.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs in Ed-T&P 294.10, 294.56, and 294.70; Ed-T&P 294.09 and 294.45; and Ed-P&L 294.

### 442 Creative Dramatics U 3

Philosophy, materials, methods, and evaluation of dramatic improvisation in developing creative artistic expression and problem solving.

3 cl, lab. Prereq: Ed-T&P 451. Not open to students with credit for Ed-T&P 442.

### 556 Teaching of Speech in Secondary Schools U 4

The relationship of speech to the total school program with special emphasis on fundamental processes and forensic activities.

4 cl. Prereq: Communic 240, 305, and 505; and Ed-T&P 451. Not open to students with credit for Ed-T&P 556.

### 587.09 Student Teaching in Secondary Schools U 3-15

Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.

Prereq: EDU 4th yr standing, 556 or Ed-T&P 556, or 631, and permission of program coordinator. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to a maximum of 15 cr hrs. For additional information see the College of Education Bulletin. This course is graded S/U.

### 588 Student Teaching in Radio-Speech Education U 3-15

Prereq: 556 or Ed-T&P 556 and 4th yr standing in educ. Repeatable to 6 cr hrs. A minimum of 15 cr hrs of student teaching is required—9 cr hrs in 587.09 and 6 cr hrs in 588 or Ed-T&P 558. For additional information see the College of Education Bulletin. This course is graded S/U.

### 633 Storytelling, Dramatization, and Creativity U G 3

Developing skills in storytelling and dramatization processes; conceptual and theoretical criteria to be developed from laboratory practice; emphasis on developing instrumentation for evaluation.

13-hr cl, 1- to 2-hr lab. Prereq: Experienced teacher or sr standing with some field experience. Not open to students with credit for Ed-T&P 629.

### 634 Children's Theatre: Production and Direction U G 5

Selection, production, and direction of plays for children with special focus upon school and recreation problems.

Prereq: Theatre 220. Not open to students with credit for Ed-T&P 630 or Theatre 565 or 501. Offered in cooperation with Theatre.

### 635 Teaching Dramatics and Oral Interpretation in Secondary Schools U G 4

The organization and conduct of dramatic classes and extra dramatic activities; resource planning for oral readings, choral speaking, radio-television programming, and theatrical production.

4 cl. Prereq: 630 or Ed-T&P 630; Communic 221; or Ed-T&P 451; and Theatre 220, 271, and 280. Not open to students with credit for Ed-T&P 631.

### 692.09 Workshops U G 1-8

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs, including cr hrs in Ed-T&P 692.10, 692.56 and 692.70; Ed-T&P 692.43; Ed-T&P 692.09, 692.25, 692.28, and 692.45; Ed-T&P 692.21; Ed-T&P 692.26 and 692.27; and Ed-P&L 692.22, 692.23, 692.29, and 692.30.

### 693.09 Individual Studies U G 1-4

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30 cr hrs for the doctoral degree. This course is graded S/U.

### 694.09 Group Studies U G 1-5

Group studies on special problems in education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-T&P 694.10, 694.56, and 694.70; Ed-T&P 694.36, 694.43, and 694.46; Ed-T&P 694.09, 694.25, 694.28, and 694.45; Ed-T&P 694.21; Ed-T&P 694.26 and 694.27; and Ed-P&L 694.22, 694.23, 694.29, and 694.30.

### 884.09 Planned Field Experience G 1-20

Planned professional teaching experience under supervision in a public school or other educational agency

Prereq: Written permission of area adviser. Repeatable to a maximum of 20 cr hrs including cr hrs in Ed-T&P 884.10, 884.56, and 884.70; Ed-T&P 884.36, 884.43, 884.46, and 884.60; Ed-T&P 884.09, 884.25, 884.28, and 884.45; Ed-T&P 884.21; and Ed-P&L 884.30.

### 893.09 Advanced Individual Studies in Speech/Theatre Education G 1-4

Su, Au, Wi, Sp Qtrs. Arr. Not more than 15 cr hrs of any 693 and/or 893 will apply toward the Master's degree; not more than 30 cr hrs will apply to the doctoral degree. Repeatable. This course is graded S/U.

### 925.09 Seminars 2-5

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

### 999.09 Research G Arr

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

## Technology Education

200 Welding Engineering Building, 190 West 19th Avenue, 292-7471

### 120 Technology Education Practices and the School U 4

Studies in technology education; introduction to tools, materials, and processes; study of past, present, and future technology education programs; observation and participation in local schools.

5 2-hr cl and lab. Not open to students with credit for Ed-T&P 120.

### 220 Design of Constructed and Manufactured Goods U 3

A study of historical and contemporary design technology as it is applied in the construction and manufacturing industries.

2 2-hr cl and lab. Prereq: En Graph 121. Not open to students with credit for Ed-T&P 220.

### 221 Manufacturing Practices I U 4

A study of basic concepts of manufacturing technology through experiences in forming, separating, combining, and assembling materials used in the production of manufactured goods.

5 2-hr cl and lab. Prereq: 120 or Ed-T&P 120, and 220 or Ed-T&P 220. Not open to students with credit for Ed-T&P 221.

### 222 Manufacturing Practices II U 5

A study of manufacturing management technology, manufacturing production technology, and manufacturing personnel technology through experiences in planning, engineering and production of selected manufactured goods.

5 2-hr cl and lab. Prereq: 221 or Ed-T&P 221. Not open to students with credit for Ed-T&P 222.

### 224 Mechanical Systems and Servicing U 4

Study of energy sources converted to power and techniques necessary for the application of mechanical power systems to servicing mechanical power systems.

5 2-hr cl and lab. Prereq: 120 or Ed-T&P 120. Not open to students with credit for Ed-T&P 224.

### 225 Transmitting and Utilizing Mechanical Power U 4

Study of the selection, installation, operation, and maintenance of mechanical power transmission systems for technological and transportation activities.

5 2-hr cl and lab. Prereq: 224 or Ed-T&P 224. Not open to students with credit for Ed-T&P 225.

### 227 Electrical Systems and Servicing U 4

Study of techniques necessary for the application of electricity to practices used in fabricating and servicing of electrical systems.

5 2-hr cl and lab. Prereq: 120 or Ed-T&P 120. Not open to students with credit for Ed-T&P 227.

### 228 Electronic Systems and Servicing U 4

Study of techniques necessary for the application of electronics to practices used in fabricating and servicing electronic systems.

5 2-hr cl and lab. Prereq: 227 or Ed-T&P 227. Not open to students with credit for Ed-T&P 228.

### 231 Construction Practices I U 5

A study of basic concepts of construction technology through experiences in forming, separating, and combining materials used in the production of residential structures.

5 2-hr cl and lab. Prereq: 120 or Ed-T&P 120, and 220 or Ed-T&P 220. Not open to students with credit for Ed-T&P 231.

**232 Construction Practices II U 5**

A study of construction management, production, and personnel technologies through real and simulated experiences in the production of constructed goods.

5-2-hr cl and lab. Prereq: 231 or Ed-T&P 231. Not open to students with credit for Ed-T&P 232.

**235 Graphic Reproduction Practices U 4**

An examination of graphic reproduction processes, manipulative skills necessary to teach graphic reproduction processes, and administrative procedures required to operate a graphic arts program.

5-2-hr cl and lab. Prereq: 120 or Ed-T&P 120, and 220 or Ed-T&P 220. Not open to students with credit for Ed-T&P 235.

**236 Printing and Publishing Practices U 4**

An examination of the managed production system utilized in the printing and publishing industry.

5-2-hr cl and lab. Prereq: 235 or Ed-T&P 235. Not open to students with credit for Ed-T&P 236.

**243 Elementary School Technology Education Activities U 5**

Laboratory experiences through which society supplies its need for food, clothing, shelter, tools, machines, records, utensils, and transportation.

5-2-hr cl and lab. Prereq: Major standing in elementary or special ed. Not open to students with credit for Ed-T&P 243.

**250 Work Experience in Industry U 3-6**

Firsthand study of working conditions, methods, and processes of industry, and their implication for the teaching of technology education.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs, including cr hrs in Ed-T&P 251.

**255 Handicrafts U 4**

Designed to develop skills and knowledge in the use of the common areas of handicrafts such as leather, metals, plastics, wood, and the graphic arts.

Au, Wi, Sp Qtrs. 5-2-hr cl and lab. Open only to occ ther, phys ed, and rec educ majors. Repeatable to a maximum of 12 cr hrs, including cr hrs in Ed-T&P 255.

**289.21 Field Experience: Technology Education U 2-5**

Professional service with children or youth in a school or community agency.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-T&P 289.02 and 289.70; Ed-T&P 289.09 and 289.45; Ed-T&P 289.21; and Ed-P&L 289. This course is graded S/U.

**355 Custom Production of Manufactured Goods U 4**

Study of custom production planning and processing of industrial goods through experiences in the custom production of selected manufactured goods.

5-2-hr cl and lab. Prereq: 3rd yr standing in major. Not open to students with credit for 255 or Ed-T&P 255.

**494.21 Special Group Studies U 1-5**

Group studies for students in specialized programs.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs in Ed-T&P 494.21, and Ed-T&P 494.26 and 494.27. This course is graded S/U.

**520 Wood Products Manufacturing U G 5**

Wood product design; production organization and control; tools and equipment used to perform production practices; wood product production.

5-2-hr labs. Prereq: 231 or Ed-T&P 231 or equiv with written permission of the instructor. Not open to students with credit for Ed-T&P 520.

**525 Automation of Production Systems for Technology Educators U 5**

An introduction to robotics and automation, their applications to manufacturing, construction, communication, energy-power, systems, and methods of teaching about them; includes laboratory experiences.

4-2-hr cl. Prereq: 222 and 227.

**532 Teaching of Technology Education I U 3**

Study of societal forces and problems attributable to technology; historical, sociological, and psychological bases of technology education; development of a technology education philosophy.

Au Qtr. 1 2 1/2-hr cl. Prereq or concur: Ed-T&P 451. Not open to students with credit for Ed-T&P 532.

**533 Teaching of Technology Education II U 3**

Analysis of educational ends and means for technology education; creation of units of study for technology education; review of exemplars in curriculum.

Wi Qtr. 1 2 1/2-hr cl. Prereq: 532 or Ed-T&P 532. Not open to students with credit for Ed-T&P 533.

**534 Teaching of Technology Education III U 3**

Study of teaching methods; problems of classroom management and deviant student behavior; laboratory facilities and safety; professional considerations.

Sp Qtrs. 1 2 1/2-hr cl. Prereq: 533 or Ed-T&P 533. Not open to students with credit for Ed-T&P 534.

**587.21 Student Teaching in Secondary Schools U 3-15**

Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.

Prereq: EDU 4th yr standing and permission of program coordinator. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to 15 cr hrs. For additional information see the College of Education Bulletin. This course is graded S/U.

**610 History of Practical Arts and Vocational Education U G 3**

History of those vocational and non-vocational phases of agriculture, business, industry, and homemaking which concern education.

3 cl. Not open to students with credit for Ed-T&P 610.

**692.21 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs, including cr hrs in Ed-T&P 692.10, 692.56 and 692.70; Ed-T&P 692.43; Ed-T&P 692.09, 692.25, 692.28, and 692.45; Ed-T&P 692.21; Ed-T&P 692.26 and 692.27; and Ed-P&L 692.22, 693.23, 692.29, and 692.30.

**693.21 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the masters degree and 30 cr hrs for the doctoral degree. This course is graded S/U.

**694.21 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-T&P 694.10, 694.56, and 694.70; Ed-T&P 694.36, 694.43, and 694.46; Ed-T&P 694.09, 694.25, 694.28, and 694.45; Ed-T&P 694.21; or Ed-T&P 694.22, 694.23, 694.29, and 694.30.

**730 Technological Activities for Teachers of Exceptional Children U G 4**

The application of technological practices in developing instructional materials and activities useful in diagnostic and remediation procedures for exceptional learners.

3-2-hr cl and lab. Prereq: Ed-S&R 651 or 718 or Ed-S&R 718, or equiv with written permission of instructor. Repeatable to a maximum of 8 cr hrs, including cr hrs in Ed-T&P 730.

**735 Organization and Administration of Technology Education U G 3**

International and historic background curriculum resources and development, physical organization, administrative organization, supervisory operation, and professional policies.

1 2 1/2-hr cl. Not open to students with credit for Ed-T&P 735.

**834 Planning Technology Education Facilities G 3**

Principles of technology education and technical laboratory planning, including equipment selection for all school levels and meeting all curriculum requirements.

1 2 1/2-hr cl. Not open to students with credit for Ed-T&P 834.

**836 Practicum in Technology Education G 3-5**

Derivation of doctrine; formulation and evaluation of basic programs, curriculum development, organizational implementation, leadership problems, and professional progress, both here and abroad.

3 cl. Prereq: Secondary (587) student teaching or equiv. Not open to students with credit for Ed-T&P 836.

**837 Research in Technology Education G 3**

Identification of research problems and needs; review of research exemplars with critical analysis of research design and procedures.

3 cl. Prereq: Ed-T&P 785 and 786, or Ed-S&R 785 or 786, or permission of instructor. Not open to students with credit for Ed-Intec or Ed-T&P 837.

**844 Vocational Evaluation and Development G 3**

A study of vocational evaluation, development, and work adjustment materials and practices utilized in educational and rehabilitation settings. Scott.

1 2 1/2-hr cl. Prereq: Ed-S&R 790 or permission of instructor. Not open to students with credit for Ed-T&P 823 or Ed-S&R 844. Cross-listed in Educational Services and Research.

**845 Work Adjustment and Development G 3**

A study of the principles and procedures of work adjustment and development techniques, methods, and resources utilized in educational and rehabilitation settings.

1 2½-hr cl. Prereq: 730 or Ed-T&P 730 or permission of instructor. Not open to students with credit for Ed-S&R 845. Cross-listed in Educational Services and Research.

**846 Development of Technology Education Vocational Education Programs for Special Needs and Culturally Diverse Students G 3**

Analysis of educational needs of special needs and culturally diverse learners with emphasis on designing, conducting, and evaluating technology education, vocational, and prevocational programs.

1 2½-hr cl. Prereq: 533 or equiv with written permission of instructor. Not open to students with credit for Ed-T&P 830.

**858 Technology Education in the Elementary School G 3**

Selection, development, and evaluation of typical experience units in both classrooms and practical arts laboratory situations at all levels of the elementary schools.

3 cl. Prereq: 243 or Ed-T&P 243 or equiv. Not open to students with credit for Ed-T&P 858.

**859 Technology Education Curriculum Planning G 3**

Analysis of curriculum research; analysis of instructional materials; application of technology education principles to general education.

1 2½-hr cl. Prereq: Secondary (587) student teaching, or equiv. Not open to students with credit for Ed-T&P 859.

**884.21 Planned Field Experience G 1-20**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser. Repeatable to a maximum of 20 cr hrs including cr hrs in Ed-T&P 884.10, 884.56, and 884.70; Ed-T&P 884.36, 884.43, 884.46, and 884.60; Ed-T&P 884.09, 884.25, 884.28, and 884.45; Ed-T&P 884.21; Ed-T&P 884.26 and 884.27; and Ed-P&L 884.30. This course is graded S/U.

**893.21 Advanced Individual Studies in Technology Education G 1-4**

Su, Au, Wi, Sp Qtrs. Arr. Not more than 15 cr hrs of any 693 and/or 893 will apply toward the Master's degree; not more than 30 cr hrs will apply to the doctoral degree. Repeatable. This course is graded S/U.

**894.21 Group Studies G 1-5**

Advanced group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-T&P 894.10, 894.56, and 894.70; Ed-T&P 884.21; and Ed-T&P 894.26 and 894.27.

**925.21 Seminars G 2-5**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. This course is graded S/U.

**999.21 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**Vocational-Technical Education**

325 Ramseyer Hall, 29 West Woodruff Avenue, 292-5037

**251 Evaluation of Occupational Competency U 3-6**

Occupational competency credit in subject matter field established by comprehensive examination.

Su, Wi Qtrs. Arr. Prereq: 4 yrs occupational experience. Repeatable to a maximum of 24 cr hrs, including cr hrs in Ed-Votec or Ed-P&L 251. Open only to students majoring in one of the vocational education teaching and industrial training areas. This course is available for EM credit.

**575 Vocational-Technical Teaching**

Development of basic cognitive and performance skills required to earn a one-year vocational certificate by new nondegree vocational teachers.

Su, Au, Wi, Sp Qtrs. Prereq: Current employment as a vocational teacher. Repeatable to a maximum of 24 cr hrs, including cr hrs in Ed-P&L 575.

**575.01 Preservice Program U 8**

Su Qtr. 8 hrs/day for 20 days. This course is graded S/U.

**575.02 Inservice I U 2**

Su, Au, Wi, Sp Qtrs. Prereq: 575.01 or Ed-P&L 575.01.

**575.03 Inservice II U 2**

Su, Au, Wi, Sp Qtrs. Prereq: 575.02 or Ed-P&L 575.02.

**575.04 Inservice III U 2**

Su, Au, Wi, Sp Qtrs. Prereq: 575.03 or Ed-P&L 575.03.

**575.05 Two Week Followup Program U 4**

The refinement of curriculum development leadership and human relations skills required by employed, one-year certified vocational teachers.

Su Qtr. 8 hrs/day for 10 days. Prereq: 575.04 or Ed-P&L 575.04. This course is graded S/U.

**575.06 Vocational-Technical Teaching: n-Service IV U 1**

The development and refinement of basic design and development skills required of a second year nondegree vocational teacher to earn a one-year vocational certificate.

**575.07 Vocational-Technical Teaching: In-Service V U 1**

Continuation of 575.06.

Wi Qtr. Arr. Prereq: 575.06.

**575.08 Vocational-Technical Teaching: In-Service VI U 1**

Continuation of 575.07.

Sp Qtr. Arr. Prereq: 575.07.

**575.09 Vocational-Technical Teaching: Clinical Project U 3**

Design and development of a clinical project that addresses a teacher's cognitive or performance skill need for a nondegree vocational teacher to earn a one-year vocational certificate.

Su, Au, Wi, Sp Qtrs. Prereq: Employment as a Vocational Teacher.

**587 Student Teaching in Secondary Schools U 3-15**

Observation, participation, and responsible teaching in a public school; individual and group conferences or seminars.

Au, Wi, Sp Qtrs. Prereq: Ed 4th yr standing. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to the required 15 cr hrs, including cr hrs in Ed-P&L 587.22, 587.23, and 587.29. For additional information, see College of Education Bulletin. These courses are graded S/U.

**587.22 Trade and Industrial Education****587.23 Business Education****587.29 Marketing Education****609 Evolution of Vocational Education U G 3**

Introduction to the development of vocational education including consideration of influences affecting legislation, federal acts, and basic concepts which have evolved.

Au, Sp Qtrs. 1 2½-hr cl. Prereq: Permission of instructor. Not open to students with credit for Ed-P&L 609.

**620 Foundations of Vocational Education U G 4**

Role of a vocational teacher and an investigation of the theories reflective of vocational instruction.

Au, Sp Qtrs. 1 2½-hr cl, 2-hr clinical. Prereq: Upper-division admission to Business Teacher Education Program.

**622 Business Technology Education I U G 5**

The relationship of business technology to business education subjects is discussed; foundational understanding and skill/application development in business education subjects.

Au Qtr. 1 3-hr cl, 2-hr clinical. Prereq: 620 or Ed-P&L 620.

**623 Business Technology Education II U G 5**

Advanced applications of business technology to business education subjects; planning classroom instruction, policy, followup evaluations are discussed; field-based experiences in business and educational settings.

Sp Qtr. 1 3-hr cl, 2-hr lab. Prereq: 622 or Ed-P&L 622.

**628 Clinical Internship**

20 hrs minimum equal 1 cr hr. Prereq: EDP students with a CPHR of 2.50 or above, or grad students in good standing.

**628.01 Classroom Observations U G 3-15**

Observation of vocational and technical classroom instruction in field-based educational setting.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**628.02 Experience in Business U G 3-6**

Practical vestibule experience in a private sector setting to gain knowledge of an industry and to develop new skills and knowledge.

Repeatable to a maximum of 6 cr hrs.

**628.03 Teacher Aide U G 4-8**

Practical experience as a professor's aide in a summer teacher certification training clinic or workshop.

Su Qtr. Repeatable to a maximum of 8 cr hrs.

**629 Advanced Teaching Internship U G 15**

Responsible and intensive teaching in an approved field-based school setting; teaching styles are practiced under supervision of a career professional, with continual follow-up conferences, seminars.

Au, Wi, Sp Qtrs. 2-hr cl, 15 hrs field experience. Prereq: Permission of instructor and satisfactory completion of 628 or Ed-P&L 628.

**630 Supervision of Student Vocational Clubs G 3**

Designed to provide student vocational club coordinators, instructors, and supervisors with leadership competencies for promoting and maintaining local, state, and national activities.

Au Qtr. 3 cl. Not open to students with credit for Ed-P&L 631.

**631 Instructional Strategies for Vocational Work Experience Programs U G 3**

Preparation and delivery of lessons, placement, and follow-up of students on-the-job.

Au Qtr. 1 2½-hr cl. Prereq: Edu major. Not open to students with credit for Ed-P&L 631.

**632 Software Applications for Business/Industry Teachers and Trainers U G 5**

Business/industry-oriented foundation to microcomputer applications frequently used by trainers and vocational teachers.

Wi, Su Qtrs. 1 3-hr cl, 2-hr lab. Prereq: 622 or Ed-P&L 622 and Cptr/Inf 100.

**646 Coordination of Cooperative Vocational-Technical Education Programs U G 3**

Designed to develop the knowledges, attitudes, and competencies to operate effectively a cooperative vocational-technical education program.

Sp Qtr. 1 2½-hr cl. Prereq: Ed-T&P 451 or equiv. Not open to students with credit for Ed-P&L 646.

**655 Shop and Laboratory Organization and Management U G 3**

Designed to help vocational and technical teachers to plan, organize, and manage vocational shops and technical laboratories used in various educational settings.

Au, Sp Qtrs. 1 2½-hr cl. Not open to students with credit for Ed-P&L 656.

**662 Determining Instructional Content of Technical-Skill Training Programs U G 3**

Systematic investigation of data collection and analysis procedures used to determine the content of technical skill jobs.

Au, Sp Qtrs. 1 2½-hr cl.

**663 Organizing Technical-Skill Training Programs U G 3-5**

Investigation of processes used to prepare objectives, evaluate items and budgets, and select and sequence appropriate strategies.

Alternate Wi and Su Qtrs. 2½-hr discussion with optional 4 hrs of clinical activities per week. Prereq: 662 and ED-P&L 600.

**664 Development of Technical-Skill Training Materials U G 3**

Development and preparation of instructional materials that require an understanding of an industry, ability to use text-publishing software, and use of critical writing skills.

Au, Sp Qtrs. Prereq: 662 and 663, and ED-P&L 600.

**665 Making Effective Technical-Skill Presentations U G 4**

Delivery strategies used to present technical and skill information to groups of learners.

Au Qtr. Prereq: 662, 663, and 664.

**666 Development of Course of Study or Curriculum Guide U G 3**

Investigation of essential elements necessary to develop a course of study or curriculum guide.

Su, Wi Qtrs. 1 2½-hr cl. Prereq: 662, 663, and 664; or 575; or 668.

**667 Essentials of Vocational Curriculum and Instruction U G 3**

Study of literature on curriculum and instruction used to prepare future employees, upgrade current employees, and prepare for changes in technology.

Sp Qtr. 2½-hr cl. Prereq: 662, 663, and 664.

**668 Vocational Teacher Certification Clinics**

Prereq: Employment as a vocational teacher with a one-year temporary certificate.

**668.01 Clinic 1 G 8**

Development of basic cognitive and performance skills required to earn a one-year vocational certificate by new vocational teachers.

Su Qtr. 5 8-hr cl for 4 weeks. This course is graded S/U.

**668.02 Clinic 2 G 2**

Supervised clinical work while teaching in a vocational program.

Au Qtr. 3 hrs clinical. Prereq: 668.01.

**668.03 Clinic 3 G 2**

Continuation of 668.02.

Wi Qtr. 3 hrs clinical. Prereq: 668.02.

**668.04 Clinic 4 G 2**

Continuation of 668.03.

Sp Qtr. 3 hrs clinical. Prereq: 668.03.

**668.05 Clinic 5 G 4**

Refinement of curriculum development skills and the development of leadership and human relations skills required by employed, one-year certified vocational teachers.

Su Qtr. 5 8-hr cl for two wks. Prereq: 668.04.

**668.06 Clinic 6 G 1**

Development and refinement of basic curriculum design and development skills required of a second-year vocational teacher.

Au Qtr. 1-hr clinical. Prereq: 668.05.

**668.07 Clinic 7 G 1**

Continuation of 668.06.

Wi Qtr. 1-hr clinical. Prereq: 668.06.

**668.08 Clinic 8 G 1**

Continuation of 668.07.

Sp Qtr. 1-hr clinical. Prereq: 668.07.

**668.09 Clinical Project G 3**

Design and development of a clinical project that addresses a vocational teacher's cognitive or performance skill necessary to earn a one-year vocational certificate.

Su, Au, Wi, Sp Qtrs. Clinical field experience, 90-180 hrs. Prereq: 668.05.

**692 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs, including cr hrs in Ed-P&L 692.48, 692.49, and 692.51.

**692.22 Trade and Industrial Education****692.23 Business Education****692.29 Marketing Education****692.30 Vocational-Technical Education****693 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Educ 451 or Ed-T&P 460, and written permission of instructor. A total of not more than 30 cr hrs in individual study (any 693) will apply toward graduation for undergrad students, 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. These courses are graded S/U.

**693.22 Trade and Industrial Education****693.23 Business Education****693.29 Marketing Education****693.30 Vocational-Technical Education****694 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-P&L 694.48, 694.49, and 694.51.

**694.22 Trade and Industrial Education****694.23 Business Education****694.29 Marketing Education****694.30 Vocational-Technical Education****707 Survey of Vocational Education U G 3**

A survey of vocational-technical education, vocational guidance, and industrial arts.

Au Qtr. 1 2½-hr cl. Prereq: Ed-T&P 451. Open to vocational educators, school administrators, and graduate students who desire information about vocational education. Not open to students with credit for Ed-P&L 807.

**757 Aspects of Training and Development in Vocational Education G 3**

Overview of theoretical frameworks and practices related to training and development in vocational education; specific job roles of educational specialists will also be examined.

Au, Sp Qtrs. 1 2½-hr cl.

**758 Applications of Statistical Quality Control to Vocational Education and Training U G 3**

An examination of current statistical quality control theory and practice applied to education and business/industry training.

Su Qtr. 1 3-hr cl. Prereq: 830 or permission of instructor.

**800 Organization and Teaching of Typing and Office Practice G 3**

The purposes, content, organization, materials, and methods of evaluation for typing and office practice courses; office practice as a part of an intensive vocational curriculum.

Wi Qtr. 2½-hr cl. Prereq: Teaching experience or permission of instructor. Not open to students with credit for Ed-P&L 801.

**802 Administration and Supervision of Business Education G 3**

Administrative problems in business education related to program, facilities, placement and follow-up of graduates, public relations, and federal-state reimbursement.

1 2½-hr cl. Prereq: Grad standing in business or vocational education or permission of instructor. Not open to students with credit for Ed-P&L 802.

**803 Improvement of Instruction in Basic Business Subjects G 3**

A study of objectives, methods, materials, and methods of evaluation for courses such as general business, consumer education, and business law. Su Qtr. 2 1/2-hr cl. Prereq: 524 or equiv. Not open to students with credit for Ed-P&L 803.

**811 Occupational Analysis G 3**

Development and utilization of procedures used in analyzing a technical occupation for teaching content.

Au Qtr. 3 cl, arr field experience. Not open to students with credit for 657 or Ed-P&L 657.

**812 Developing Instruction for Business and Industry G 3**

The systematic development of instructional programs for business and industry; role of the instructional developer in business and industry will also be examined.

Wi Qtr. 2 1/2-hr cl. Prereq: 657 or Ed-P&L 657 or permission of instructor. Not open to students with credit for 660 or Ed-P&L 660.

**813 Designing Individualized Training Systems G 3**

The design of individualized training and performance systems for business and industry.

Sp Qtr. 1 2 1/2-hr cl. Not open to students with credit for 670.

**821 Administrative Practices in Vocational Education G 3**

A study of the concepts of vocational education program administration, including management skills, policy development, staff management, finance, and program evaluation.

Sp, Su Qtrs. 1 2 1/2-hr cl. Not open to students with credit for Agr Educ 811 or 821, Ed-P&L 821. Cross-listed in Agricultural Education.

**830 Supervision of Vocational Instruction G 3**

A study of the concepts of vocational education supervision, including leadership styles, improving instruction, and program and personnel evaluation.

Su, Wi Qtrs. 1 2 1/2-hr cl. Prereq: 609 or Ed-Votec 609 or equiv and written permission of instructor. Cross-listed in Agricultural Education.

**830.22 Trade and Industrial Education**

Not open to students with credit for Agr Educ 811 or 830, or Ed-P&L 830.22.

**830.23 Business Education**

Not open to students with credit for Agr Educ 811 or 830, or Ed-P&L 830.23.

**830.29 Marketing Education**

Not open to students with credit for Agr Educ 811 or 830, or Ed-P&L 830.29.

**830.30 Vocational-Technical Education**

Not open to students with credit for Agr Educ 811 or 830, or Ed-P&L 830.30.

**833 Vocational Education Program Planning G 3**

A study of the planning, development, management, and evaluation of instructional systems in vocational education programs.

Su, Sp Qtrs. 1 2 1/2-hr cl. Not open to students with credit for Agr Educ 823 or 833, or Ed-P&L 833. Cross-listed in Agricultural Education.

**884 Planned Field Experience G 1-20**

Planned professional teaching experience in a public school or other educational agency under supervision.

Prereq: Written permission of area adviser. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-P&L 884.30.

**884.30 Vocational-Technical Education****893.30 Advanced Individual Studies in Vocational-Technical Education G 1-4**

Su, Au, Wi, Sp Qtrs. Arr. Not more than 15 cr hrs of any 693 and/or 893 will apply toward the Master's degree; not more than 30 cr hrs will apply to the doctoral degree. Repeatable. This course is graded S/U.

**894 Group Studies G 1-5**

Advanced group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**894.30 Vocational-Technical Education****925 Seminars G 2-5**

Prereq: Written permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

Research problems in:

**925.22 Trade and Industrial Education****925.23 Business and Office Education****925.29 Marketing Education****925.30 Vocational-Technical Education****999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**999.22 Trade and Industrial Education****999.23 Business and Office Education****999.29 Marketing Education****999.30 Vocational-Technical Education**

## Educational Theory and Practice

253 Arps Hall, 1945 North High Street, 292-1257

Ed-T&P 697, Ed-T&P 698, and Ed-T&P 727 may be offered by any of the program areas listed below.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-5**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable to different titled study tours only.

**698.01 Domestic****698.02 Foreign****700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Cross-listed in Ed Policy & Leadership, Ed Theory & Practice, Ed Studies, Health Education, Physical Education, and Recreation Education.

**700.01 Seminar on Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

**700.02 Changing Societal Values U G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.

**700.03 Seminar on Ethical Issues Common to the Helping Professions U G 3**

Ethical issues of concern to the professions and arising out of advanced technology; euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.

**700.05 Interprofessional Seminar in Policy Analysis U G 3**

Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

Wi Qtr.

**700.07 Interprofessional Approaches to Child Abuse and Neglect G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

Au Qtr. 1 2 1/2-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

**727 Special Topics in Education P G 1-5**

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or registration in one of the professional schools. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**727.10 Elementary Education****727.26 Mathematics Education****727.36 Teacher Education****727.56 Language Arts, Literature, and Reading****727.70 Early Childhood Education****727.76 Educational Theory and Practice**

The courses in the Department of Educational Theory and Practice are listed by program area.

*Early and Middle Childhood Education*

253 Arps Hall, 1945 North High Street 292-1257

**289 Field Experience U 2-5**

Professional service with children or youth in a school or community agency.  
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**289.02 Experience in a Community Agency**

This course is graded S/U.

**289.10 Elementary Education**

Planned elementary education field experience under supervision.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs including 289.02 and 289.70. This course is graded S/U.

**289.70 Early Childhood Education**

This course is graded S/U.

**294 Group Studies U 1-5**

Group studies for students in specialized programs.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**294.10 Elementary Education****294.70 Early Childhood Education****460 Elementary Education: Child Guidance U 4**

Designed to develop an understanding of child growth and development principles in relation to instruction.

Au, Wi, Sp Qtrs. Lab arr. Prereq: Ed-T&P 451.

**461 Elementary Education: Conceptions of Teaching U 3**

Designed to acquaint students with certain aspects of elementary school programs which cut across separate subject areas, and to acquaint students with certain teaching behaviors.

Prereq: 460.

**467 Introduction to Children's Literature U 3**

Study of literature for children with emphasis on standards for selecting materials with reference to the interests, needs, and abilities at different age levels.

Su, Au, Wi, Sp Qtrs. Prereq: Ed-T&P 451 or permission of instructor.

**489 Advanced Field Experience U 3-5**

Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings.

Su, Au, Wi, Sp Qtrs. 100-150 hrs arr. Prereq: Admission to appropriate teacher education program. Repeatable to a maximum of 15 cr hrs.

**489.10 Advanced Field Experience: Elementary Education****489.70 Advanced Field Experience: Early Childhood Education****501 Kindergarten and Preschool Teaching U 3**

Recent development in the education of young children and its influence on the selection and guidance of appropriate activities.

Prereq: 460.

**502 Elementary Education: Mathematics U 3**

A study of the methods and materials used in arithmetic instruction; includes development of functional relationships with other curriculum areas, diagnostic procedures, and remedial work.

Prereq: 460 and Math 105 and 106.

**507 Elementary Education: Language Arts U 3**

The teaching of language arts, including listening, oral, and written communications.

Prereq: 460 or Ed-E&M C 460.

**508 Elementary Education: Social Studies U 4**

Sequential arrangement of the elementary education curriculum; emphasis on social studies in the elementary school program.

Lab arr. Prereq: 460.

**511 Elementary Education: Science U 4**

The role of science in childhood education; study of content, methods, materials, and equipment.

Lab arr. Prereq: 460 and 15 cr hrs of science (natural sciences part of GEC may be used).

**513 Elementary Education: Reading U 4**

A study of various methods and materials used in the teaching of reading in the elementary school.

Lab arr. Prereq: 460. Students may not schedule more than 20 cr hrs while taking this course.

**585 Elementary Education Student Teaching**

Observation, participation, and responsible teaching in a public school; individual and group conferences or seminars.

Au, Wi, Sp Qtrs. Maximum transfer credit accepted is 6 cr hrs. For additional information, see College of Education Bulletin. These courses are graded S/U.

**585.10 Standard Elementary Student Teaching U 9 or 15**

Prereq: 4th yr standing in educ and enrollment in regular elementary education degree program. 15 cr hrs required.

**585.14 Elementary Student Teaching for Field-Based Programs U 3-15**

Students participate in teaching functions and assume major classroom responsibilities on a gradual basis from the beginning of the program.

Prereq: Enrollment in one of the approved elementary and early and middle childhood education field-based programs. Repeatable to 15 cr hrs.

**H599 Honors Course U 3-5**

A program of accelerated study for students with special aptitudes.

Prereq: Enrollment in the Honors Achievement Program and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**607 Writing Course in the Elementary Education Major U 5**

Designed to help students reflect critically, both orally and in writing, on the social, political, and cultural contexts that influence education in today's society.

Au, Wi, Sp Qtrs. 3 1 1/2-hr cl. Prereq: Admission into the College of Education. This course will be taken concurrently with 460, 467, 289.10, and ED-P&L 650.02. GEC course.

**674 Family Participation in Early Childhood School Programs U G 3**

The purposes and importance of family involvement in early childhood school programs, types of programs, resources, methods, and curricula.

Prereq: Ed-P&L 673 or permission of instructor.

**690 Practicum in Problems of Public Education U G 3**

Group review of specific problems in public education.

3 cl. Prereq: 461 or equiv, and permission of instructor. Open to experienced teachers and administrators. Request to offer practicum must be received by dept in time to allow for planning. Repeatable to a maximum of 9 cr hrs, including cr hrs in Ed-P&L 690. Cross-listed in Educational Policy and Leadership. This course is graded S/U.

**692 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

**692.10 Elementary Education****692.70 Early Childhood Education****693 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. These courses are graded S/U.

**693.10 Elementary Education****693.70 Early Childhood Education****694 Group Studies U G 1-5**

Group studies on special problems in education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs.

**694.10 Elementary Education****701 A Survey of Current Research and Trends in Early and Middle Childhood Education U G 3**

Designed to emphasize the appraisal of recent research and the application of efficacious findings to teaching practice and educational policy in the area of early and middle childhood education.

Su, Au, Wi, Sp Qtrs. 1 2 1/2-hr or 2 1-1/2-hr cl.

**702 Children's Language and Learning G 3**

Examination of children's oral and written language development and related theoretical understandings instrumental for teaching language arts.

Su, Au, Wi, Sp Qtrs. 2 1 1/2-hr cl.

**704 Integration of Child Development and Learning Theories G 3**

Focus on how children's behavior and learning develop in education contexts ranging from early childhood through the adolescent years.

Su, Au, Wi, Sp Qtrs. 2 1 1/2-hr cl.



**705 Language/Literacy I G 3**

Focus on principles and practices for facilitating the effective development and use of oral and written language by children in grades K-3.

Su, Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 702 and 704.

**706 Language/Literacy II G 3**

Focus on principles and practices for facilitating the effective development and use of oral and written language by children in grades 4-8.

Su, Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 702, and 704, 705.

**708 Teaching and Learning of Mathematics in Grades K-3 G 3**

Examination of instructional strategies that facilitate the teaching and learning of mathematics in grades K-3.

Su, Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 702 and 704.

**709 Teaching and Learning of Mathematics in Grades 4-8 G 3**

Examination of instructional strategies that facilitate the teaching and learning of mathematics in grades 4-8.

Su, Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 702, 704, 705, and 708.

**728 Analysis of Teaching Young Children U G 3**

Current education and human development theories as they relate to the teaching-learning phenomenon.

1 2 1/2-hr sem and 1 clinical observation. Prereq: Basic course in child development. Designed for grad students/in-service teachers.

**729 Teaching and Learning of Science in Grades K-3 G 3**

Exploration of contemporary alternatives in elementary science education and the development of knowledge and skills for teaching and learning in grades K-3.

Su, Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 702 and 704.

**731 Teaching and Learning of Science in Grades 4-8 G 3**

Exploring innovations in science education and the development of knowledge and skills for facilitating integrated, experience-based approaches to science instruction in grades 4-8.

Su, Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 702, 704, 705, and 729.

**736 Integrating Strategies: Teacher Questioning Behavior U G 3**

Designed to analyze and facilitate mastery of question-asking strategies and techniques to improve instruction and the responding patterns of students. Cunningham.

3 cl.

**737 Teaching and Learning of Social Studies in Grades K-3 G 3**

Exploration of current theories in the teaching and learning of social studies in grades K-3.

Su, Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 702 and 704.

**738 Teaching and Learning of Social Studies in Grades 4-8 G 3**

Study of current theories in the teaching and learning of the historical, ethical, cultural, geographic, economic, and socio-political aspects of social studies in grades 4-8.

Su, Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 702, 704, 705, and 737.

**811 Science in Elementary Education G 3**

Problems of elementary school science instruction with emphasis on pertinent literature and classroom implementation of current developments in science curriculum and methodology.

Prereq: 585 or secondary (587) student teaching or 3 yrs teaching experience.

**812 Mathematics in Elementary Schools G 3**

Applications of research and theory to improve children's competence and problem solving; organization of instructional programs and contemporary instructional questions. Stull.

Prereq: 585 or secondary (587) student teaching or 3 yrs teaching experience.

**814 Social Studies in the Elementary School G 3**

The educational values of social studies, reasons for and ways and means of integrating the social sciences with emphasis upon program innovations and research.

Prereq: 585 or secondary (587) student teaching or 3 yrs teaching experience.

**815 Guidance Problems in the Elementary School G 3**

Selected problems which the elementary teacher faces in providing individual, small-group, and large-group guidance.

Prereq: 585 or secondary (587) student teaching.

**818 Foundations of Elementary Education G 3**

Study of phenomena that undergird or bear on practice in elementary education; topics include the family, childhood and children, teachers and teaching, and schooling.

**819 The Changing American Elementary School G 3**

Investigation of objectives, issues, and curriculum organization of the modern elementary school program.

Prereq: 585 or secondary (587) student teaching or 3 yrs teaching experience.

**821 School Problems in Child Development G 3**

Advanced study based upon research in education and related fields which aids the teacher in guiding developmental activities of children in the elementary school.

**823 Creative Experiences in the Elementary School Curriculum G 3**

Study of the nature of creativity and aesthetics as related to the elementary school curriculum.

**824 Designing School Programs for Children Age Two to Six G 3**

A study of the characteristics and needs of children two to six years of age as they relate to the development of educational programs.

**825 Methods of Developing Language and Cognition in Early Childhood G 3**

Curriculum methods and materials in developing language and cognition in school programs for children ages three to eight, based upon research findings.

Prereq: 824 or permission of instructor.

**826 Research in Early Childhood Education G 3**

Exploration of research methods and techniques related to early childhood school programs; review of research in the field; in-depth investigation of interest area.

Prereq: 785 and 786 or permission of instructor.

**829 Problems in Elementary School Curriculum and Supervision G 3**

An analysis of the programs and practices involved in facing major curriculum problems in the elementary schools; synthesis of supervision and curriculum.

Prereq: 819 or Ed-P&L 861.

**830 Early Childhood Education: Multi-Cultural Influences G 3**

A study of early childhood curriculum content and teaching methods as influenced by multi-cultural factors.

1 3-hr cl. Prereq: Written permission of instructor.

**838 Learning Styles G 3**

Education dimensions of learning styles in children and adults related to developmental, neurological, social, and environmental substrates of learning.

1 3-hr cl. Prereq: Previous teaching experience or permission of instructor. Open to grad students in any field of specialization in education.

**839 Evaluation in Elementary Schools G 3**

Appraisal of materials and methods in terms of educational aims and research findings; consideration of instruments and procedures for comparing achievements with established objectives.

Prereq: 585 or secondary (587) student teaching or 3 yrs teaching experience.

**848 Understanding Preschool Play G 3**

A study of relevant theories, developmental stages, and research as they relate to developing programs for young children.

1 3-hr cl. Prereq: Fm&Hu Dv 332 or 662, or permission of instructor.

**849 Observing and Facilitating Preschool Play G 3**

Continuation of 848; extensive analysis of experiences in facilitating preschool play and clinical experience regarding the play of young children.

1 3-hr cl or field experience. Prereq: 848 or equiv with written permission of instructor.

**852 Science and Early Childhood Education G 3**

The nature, scope, and role of science experiences in the learning and development of young children; integration and application of current developments; theory and research in science with early childhood education.

1 3-hr cl. Prereq: Experience with young children or introductory child development course.

**866 Internship and Reflective Seminar G 10**

Ten-week full-time internship in an elementary school classroom where students assume major teaching responsibilities under the guidance of a cooperating teacher and University supervisor.

Su, Au, Wi, Sp Qtrs. Full-time daily: 8:00 a.m.-4:00 p.m. Prereq: Completion of certification courses. This course is graded S/U.

**884 Planned Field Experience G 1-15**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser. Repeatable to a maximum of 15 cr hrs including cr hrs.

**884.10 Elementary Education**

This course is graded S/U.

**884.70 Early Childhood Education**

This course is graded S/U.

**893.10 Advanced Individual Studies in Elementary Education G 1-4**

Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U.

**893.70 Advanced Individual Studies in Early Childhood Education G 1-4**

Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U.

**894 Group Studies G 1-5**

Advanced group studies on special problems in education.

Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**894.10 Elementary Education**
**920 Advanced Concepts in Elementary School Science Education G 3**

Emphasis on functions of leadership personnel in developing and improving elementary school science programs and on evaluation of current developments and research.

Prereq: 811 or permission of instructor.

**925 Seminars G 2-5**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

**925.10 Elementary Education**
**925.70 Early Childhood Education**
**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**999.10 Elementary Education**
**999.70 Early Childhood Education**

## *Language Arts, Literature, and Reading Education*

200 Ramseyer Hall, 29 West Woodruff Avenue, 292-0711

**294.56 Group Studies U 1-5**

Group studies for students in specialized programs.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs.

**489 Advanced Field Experience U 3-5**

Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings.

Su, Au, Wi, Sp Qtrs. 100-150 hrs arr. Prereq: Admission to appropriate teacher education program. Repeatable to a maximum of 15 cr hrs.

**489.56 Advanced Field Experience: Reading Education**
**535 Fundamentals of Secondary Reading Instruction U 3**

Principles, methods, and materials of reading instruction in secondary schools.

3 cl. Not open to students with credit for Ed-Stds 535. Cross-listed in Educational Studies.

**605 Reading in the Bilingual/Multicultural Classroom U G 3**

Major issues in reading theory and instruction as related to specific needs of children who are learning English as a second language.

1 2 1/2-hr cl. Prereq: Ed-T&P 451 or equiv or written permission of instructor.

**606 Language Arts in the Bilingual/Multicultural Classroom U G 3**

Research and theories of first and second language acquisition as related to methods of teaching, listening, speaking, reading, and writing in bilingual/multicultural classroom.

1 2 1/2-hr cl. Prereq: Ed-T&P 451 or equiv or written permission of instructor.

**665 Applied Linguistics for Teachers of Reading/Language Arts U G 3**

Structure of language, language acquisition, and language variation applied to language arts/reading principles, methods, and materials.

2 1 1/2-hr cl.

**670 Remedial and Clinical Reading Instruction U G 3**

An overview of theory and practice, including causes, diagnostic procedures, remediation, and instructional materials.

Su, Au, Wi Qtrs. 1 2 1/2-hr cl. Cross-listed in Educational Services and Research.

**671 Clinical Practice in Treating Reading Disabilities U G 3**

Use of test materials in the diagnosis of reading disabilities; practice with remedial procedures.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl, 3 1-hr lab arr. Prereq: Ed-T&P 732 and permission of instructor. Cross-listed in Educational Services and Research.

**692.56 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs. These courses are graded S/U.

**722 Literature Across the Curriculum U G 3**

Non-fiction for ages 4-12 as it contributes to social studies, the sciences, language arts, and the creative arts; emphasis on identifying quality selections and planning related to learning experiences.

1 3-hr cl. Prereq: 467.

**732 Corrective Reading U G 3**

Diagnostic techniques and instructional methods and materials useful to the elementary and secondary classroom teacher in helping individuals and small groups of problem readers. Zutell.

Prereq: 665 or Educ Stds 612.

**734 Evaluation of Reading U G 3**

Examination of current measurement techniques in reading from theoretical, technical, and cultural perspectives.

1 2 1/2-hr cl.

**816 Language Arts in the Elementary School G 3**

Problems, research, and current methods of teaching the four major areas of the language arts in the elementary school; listening, speaking, reading, and writing.

Prereq: 665.

**817 Advanced Course in Children's Literature G 3**

An evaluation of the changing role and increased importance of literature in the education of children and youth.

Prereq: 467.

**827 Advanced Study in the Teaching of Developmental Reading G 3**

Designed to provide experienced teachers the opportunity to extend and update their knowledge of the reading process and the principles underlying effective reading instruction.

Prereq: 665 or Educ Stds 612.

**828 Trends and Issues in Teaching Reading in the Elementary School G 3**

Designed for experienced teachers and curriculum workers; current developments, trends, and issues critically analyzed according to available research evidence.

Prereq: 813 or permission of instructor.

**840 Writing in the Elementary School G 3**

Study of the implications from recent research and theory in language learning and use in respect to writing, spelling, handwriting, and grammar.

1 2 1/2-hr cl. Prereq: 813.

**841 Poetry for Children G 3**

An in-depth study of poetry for children including children's interest in poetry, forms of poetry, and representative poets, classroom approaches for encouraging children's involvement and appreciation of poetry.

1 2 1/2-hr cl. Prereq: 817 or 856.

**843 Literature for Middle Childhood G 3**

Analysis and study of fiction for children ages 8-12; emphasis on literary quality, strategies for classroom use, and relevant issues.

1 2 1/2-hr cl. Prereq: 817.

**853 Critical Reading in the Content Fields G 3**

Exploration of the problems of developing critical reading ability in a variety of curricular fields.

Prereq: 535 or 827.

**854 Reading in its Social Setting G 3**

The influence of culture on the nature, quality, and quantity of reading development; the relationship of reading to language development and mass media.

**855 Practicum in Reading G 3**

Application of research, diagnostic, prognostic, and program development methodology in field settings.

Lab arr. Prereq: Permission of instructor.

**860 Language Arts in the Early Childhood Program G 3**

The process of children's language acquisition leading towards development of reading skills; practical applications from theory and research on language processing.

1 3-hr cl. Prereq: Experience in working with young children or introductory level child development course.

**861 Literature in Early Childhood Education G 3**

Study of literature for children ages two through seven; emphasis on the importance of early exposure to literature for language acquisition and for cognitive and affective development.

1 2½-hr cl. Prereq: 467 and/or 728.

**862 Roots of Fantasy for Children G 3**

A study of selected works of fantasy for children (grades 4-9) along with their sources in traditional literature; works based on Arthurian legends, the Welsh Mabinogion, and other folklore from the British Isles.

1 2½-hr cl. Prereq: 817 or 856.

**864 Multicultural Literature for Children G 3**

Values and uses of literature by and about Blacks, Asians, Hispanics, Native Americans, and other U.S. ethnic groups: theoretical perspectives, trends, issues, and controversies.

Au Qtr. 1 2½-hr cl. Prereq: 467 or equiv.

**884.56 Planned Field Experience G 1-15**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser. Repeatable to a maximum of 15 cr hrs including cr hrs. This course is graded S/U.

**893.56 Advanced Individual Studies in Language Arts, Literature, and Reading Education G 1-4**

Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U.

**921 A Guided Survey of Research in Reading G 3**

Designed to provide acquaintance with scientific studies relating to reading, methods used, results attained, including implications and limitations, and the problems meriting further investigation.

Prereq: 6 cr hrs in grad reading courses. Repeatable to a maximum of 6 cr hrs.

**925.56 Seminars G 2-5**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

**999.56 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**Mathematics Education**

253 Arps Hall, 1945 North High Street, 292-1257

**489 Advanced Field Experience U 3-5**

Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings.

Su, Au, Wi, Sp Qtrs. 100-150 hrs arr.

**489.01 Middle School-Jr High School Mathematics Education**

Wi Qtr. Prereq: Admission to appropriate teacher education program.

**489.02 Elementary School Mathematics Education**

Prereq: Admission to appropriate teacher education program.

**489.03 Secondary School Mathematics Education**

Au Qtr. Prereq: 489.02 or Ed-Sc&Ma 489.02 or permission of instructor.

**546 Teaching Mathematics in Secondary Schools I U 4**

Mathematical concepts, objectives, and classroom procedures appropriate for secondary schools; selection, preparation, and use of teaching materials including lesson plans, study guides, textbooks, and multisensory aids.

Au Qtr. 4 cl. Prereq: Ed-T&P 451 and 20 cr hrs in math.

**587.26 Student Teaching in Secondary Schools U 3-15**

Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.

Prereq: EDU 4th yr standing and permission of program coordinator. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to 21 cr hrs. For additional information see the College of Education Bulletin. This course is graded S/U.

**621 Teaching Mathematics in Secondary Schools II U G 4**

Selected problems in curriculum; evaluation, materials of instruction, and the teaching of specific topics in arithmetic, algebra, and geometry.

Au Qtr. 4 cl. Prereq: 546 and 25 cr hrs in math.

**689 Middle and Senior High School Mathematics Field Experience U G 6**

Experience in appropriate mathematics classes with an emphasis on acquiring skills to work with students in a school setting while developing skills in preparing, conducting, and evaluating teaching activities.

Su Qtr. 3-hrs/day for 5 days/wk for 8 wks. Prereq: Admission to the post-degree program in mathematics education and concur: 546.

**692.26 Workshops U G 1-8**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

**693.26 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. These courses are graded S/U.

**711 Concepts of School Mathematics G 3**

Organizing concepts of school mathematics, their development through the mathematics curriculum, and their role on the learning of mathematics.

3 cl. Prereq: A course in foundations of math or concur Math 645, grad standing in math educ or math or permission of instructor. Subdivisions intended to be taken in sequence. Subdivisions not repeatable.

**711.01 Functions**

Su Qtr. Prereq: Math 580.

**711.02 Equivalence**

Au Qtr. Prereq: 711.01 or permission of instructor.

**711.03 Measure and Measurement**

Wi Qtr. Prereq: 711.01, 711.02, or permission of instructor.

**711.04 Variable**

Su Qtr. Prereq: 711.01, 711.02, 711.03, or permission of instructor.

**712 Methods of School Mathematics G 3**

Examination of curriculum, instruction, and forces that influence curriculum and instruction in school mathematics, grades 7 through 12.

2 2½-hr cl. Prereq: Grad standing in math edu or permission of instructor.

**712.01 Introduction to Teaching of Secondary School Mathematics**

Su Qtr.

**712.02 Classroom Procedures**

Au Qtr.

**712.03 Providing Effective Instruction in Mathematics**

Wi Qtr.

**721 Logic and Psychology in School Mathematics U G 3**

A study of the nature of psychological growth and the development of logical ability in children and the implications for teaching mathematics.

3 cl. Prereq: Teaching experience or written permission of instructor.

**802 Processes of School Mathematics G 2-5**

Processes of school mathematics, their development through the mathematics curriculum, and their role in the teaching and learning of mathematics.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in math ed or math, or permission of instructor.

**802.01 Representations****802.02 Examples and Nonexamples****802.03 Axiomatics****802.04 Problem Solving****802.05 Experimentation****802.06 Exposition****884.26 Planned Field Experience G 1-15**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser. Repeatable to a maximum of 25 cr hrs.

**893.26 Advanced Individual Studies in Mathematics Education G 1-4**

Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U.

**899 Interdepartmental Seminar in Teaching College Mathematics G 2-4**

Discussion of problems raised by courses for liberal or general education, service courses, or special education courses commonly offered in college mathematics; given cooperatively by Math and Ed-T&P.

1 3-hr cl. Prereq: Permission of instructor. Not open to students with credit for Ed-Sc&Ma 899.

**925.26 Seminars G 2-5**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times.

**999.26 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**Teacher Education**

236E Ramseyer Hall, 29 West Woodruff Avenue, 292-1280

**450 Professional Introduction I U 6**

A common, integrated introduction to human development, general instructional methods, human relations, cultural pluralism, and school as a social phenomenon; extensive clinical and field experiences. Cruz.

Su, Au, Wi, Sp Qtrs. Lect, lab exper in field arr. Prereq: Psych 100 and admission to an undergrad teacher education program certification area, and EDP standing in the College of Education.

**451 Professional Introduction II U 6**

Continuation of 450. Cruz.

Su, Au, Wi, Sp Qtrs. Lect, lab exper in field arr. Prereq: 450 and EDP standing in the College of Education.

**683 Solving Classroom Problems U G 3**

Exploration of problem areas of classroom control, student learning, parent relationships, relationships with other teachers, and time management.

1 2 1/2-hr cl. Prereq: Student teaching or permission of instructor. Not open to students with credit for Ed-F & R 683.

**693.36 Individual Studies U G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. This course is graded S/U.

**756 Inservice Education of Teachers G 3**

An overview of the goals, problems, practices, issues, research, theory, organizations, and literature of inservice education for teachers. Cruz.

Sp Qtr. 1 3-hr cl.

**768 Directing Student Teachers U G 3**

Principles and techniques for directing the laboratory experiences of student teachers and other teacher education students. Cruz.

1 2 1/2-hr cl. Prereq: experience.

**851 College Teaching G 3**

Designed as initial preparation for instruction at the college level; focuses on the generic skills, strategies, and issues common to university teaching. Cruz.

1 2 1/2-hr cl. Open to grad students committed to teaching in any area at the college level. Not open to students with credit for Ed-P&L 851. Cross-listed in Educational Policy and Leadership. This course is graded S/U.

**884.36 Planned Field Experience G 1-15**

Planned professional teaching experience under supervision in a public school or other educational agency.

Prereq: Written permission of area adviser. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**893.36 Advanced Individual Studies in Teacher Education G 1-4**

Prereq: Permission of instructor. For thesis option, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree. For non-thesis option, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. This course is graded S/U.

**925.36 Seminars G 2-5**

Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. This course is graded S/U.

**926 Curriculum and Instruction in Teacher Education G 6**

Study of teacher education curriculum and how instruction is conducted; hands-on experience with newer instructional alternatives, e.g., microteaching, reflective teaching, and simulation. Cruz.

Au Qtr. 2 2 1/2-hr cl.

**927 Trends, Issues, and Problems in Teacher Education G 3**

Provides awareness and knowledge of critical events and circumstances related to teacher preparation. Cruz.

Wi Qtr. 1 2 1/2-hr cl.

**928 Inquiry in Teacher Education G 3**

Study of a variety of research in teacher education with emphasis on research on teacher effectiveness. Haeefe.

Sp Qtr. 1 2 1/2-hr cl.

**929 Developing the Curriculum in Teacher Education G 4**

To acquaint prospective teachers of teachers with processes for curriculum development in teacher education: to permit them to develop a curriculum for the preparation of teachers.

Su Qtr. 1 2-hr cl, 1 2-hr lab. Open only to PhD students.

**937 Roles of Field and Clinical Experiences in Teacher Education G 3**

An analysis of student teaching and related direct experiences in teacher education with special emphasis on the theoretical basis, purposes, organization, curriculum patterns, evaluation, administration, and problems in the design of experiences.

Wi Qtr. 3 cl. Prereq: Master's degree, college supervision of student teachers, or permission of instructor.

**999.36 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

**Electrical Engineering**

205 Electronics Laboratories, 2015 Neil Avenue, -292-2572

**203 Circuit Analysis, Design, and Simulation I U 3**

Resistance circuits, including dependent sources and ideal operational amplifiers; transients in RL, RC, and RLC circuits with switching, ramp, step, and impulse sources.

Au, Wi, Sp Qtrs. Prereq: Physics 133, Eng Graph 167 or Cptr/Inf 221, and concur: Math 415; minimum CPHR of 2.00; acceptance in Elec Eng major or written permission of Elec Eng Dept.

**204 Circuit Analysis, Design, and Simulation II U 3**

Phasor representation of sinusoidal steady-state circuits; average power and RMS values; three-phase circuits; mutual inductance; resonance; and Fourier series.

Au, Wi, Sp Qtrs. Prereq: 203, Math 415, acceptance in Elec Eng major or written permission of Elec Eng Dept.

**206 Switching Circuits Lab U 1**

NAND, NOR, XOR gates; combinational circuits; adders, code converters; flip flops: sequential circuits; shift registers, counters.

Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq: 261 or equiv.

**207 Circuits Laboratory I U 2**

Use of basic electrical measuring instruments including the oscilloscope; laboratory investigation of transient response and frequency response; introduction to the operational amplifier.

Au, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Concur: 204 or equiv.

**261 Introduction to Logic Design U 3**

Introduction to combinational switching theory, Boolean algebra, and clocked sequential networks.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Math 153, Physics 133, En Graph 200, a minimum CPHR of 2.00, and acceptance as an elec eng major or written permission of instructor. Not open to students with credit for 260.

**265 Introduction to Microprocessor-Based Systems U 3**

Hardware and software organization of a typical microprocessor; machine language programming, interfacing peripheral devices, and input-output programming; real-time computer applications, self-paced laboratory included.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 261 and En Graph 167.

**293 Individual Studies in Electrical Engineering U 1-15**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**300 Electrical Circuits U 3**

Introduction to circuit analysis; circuit analysis concepts and their extension to mechanical and thermal systems by analogy; electrical instruments and measurements.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Physics 133 and Math 254. Not open to students with credit for 500.

**305 Circuit Analysis, Design, and Simulation III U 3**

Representation of circuits in the complex frequency domain; Bode diagrams, operational amplifier application circuits; diode models; and rectifier circuits.

Au, Wi, Sp Qtrs. Prereq: 204, acceptance in elec eng major or written permission of Elec Eng Dept.

**308 Circuits Laboratory II U 2**

Properties of inductors and capacitors; bridge circuits; computer aided analysis techniques; active filters; Fourier analysis; and double-tuned circuits.

Au, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq: 207, concur: 305. Not open to students with credit for 208.

**309 Electrical Circuits Laboratory U 1**

Accompanies and complements 300 by demonstrating the physical principles discussed there; use of electrical instruments such as oscilloscopes, voltmeters, ammeters, etc., are also emphasized.

Prereq or concur: 300. Not open to students with credit for 507.

**311 Electromagnetics I U 3**

Static electric fields, dielectric materials, static magnetic fields, magnetic materials.

Au, Wi, Sp Qtrs. Prereq: 204, Math 415, and acceptance as electrical engineering major.

**312 Electromagnetics II U 3**

Time-changing electric and magnetic fields, induction, Maxwell's equations, plane waves, basic transmission line theory.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 311.

**320 Electronic Devices and Controls U 3**

Theory and applications of electronic devices; study of control circuits, feedback, operational amplifiers, and instrumentation.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 300 or Mech Eng 482 or equiv. Not open to students with credit for 520.

**321 Electronic Analysis, Design, and Simulation I U 3**

Bipolar junction transistor and field-effect transistor modeling, analysis, and simulation at low frequencies; common emitter (source), collector (drain), base (gate), cascode, and differential amplifiers.

Au, Wi, Sp Qtrs. Prereq: 305, acceptance in elec eng major or written permission of Elec Eng Dept.

**322 Electronic Analysis, Design, and Simulation II U 3**

Amplifier frequency response; feedback circuits, operational amplifier structure; sinusoidal and relaxation oscillator circuits; nonlinear operational amplifier circuits; and logic circuit structure.

Au, Wi, Sp Qtrs. Prereq: 321, acceptance in elec eng major or written permission of Elec Eng Dept.

**327 Electronic Devices and Circuits Laboratory I U 2**

Transistor characteristics, large and small signal parameters, transistor bias and amplifier circuits, operational amplifiers, logic circuits, waveform generation.

Au, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq or concur: 322. Not open to students with credit for 427.

**329 Electronic Devices and Control Laboratory U 1**

Accompanies and complements 320 by demonstrating the principles discussed there; diodes, transistors, operational amplifiers, etc.

Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq or concur: 320. Not open to students with credit for 527.

**331 Introduction to Materials for Electrical Engineering U 3**

Introduction to the interrelation of the structure, properties, and processing of materials, with emphasis on electronic properties.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Chem 125, Math 415, Physics 133, a minimum cumulative pt-hr of 2.00, and acceptance as an engineering major, or written permission of dept.

**340 Electric Machinery U 3**

Electromechanical devices; an introduction to the basic principles of analysis of electromechanical devices; the approach is organized to extend the circuit concepts and dynamic analysis introduced in the preceding course.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 204 or 300 or Mech Eng 382 or equiv. Not open to students with credit for 540. Open only to engineering majors, or with written permission of dept.

**341 Energy Conversion U 3**

Overview of energy conversion, with emphasis on the operation of AC and DC machines, and various alternative energy conversion processes.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 204. Not open to students with credit for 541.

**351 Systems I U 3**

Linear systems and models; computer-aided analysis; convolution and impulse response for discrete and continuous time; state variables.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 305 and Math 415.

**352 Systems II U 3**

Transform techniques, Z-transforms, Fourier transforms, and Laplace transforms; computer-aided analysis; digital filters.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 351.

**432 Physics of Semiconductor Devices U 3**

Principles of semiconductor devices; theory of excess carriers, photoelectric effects, and diffusion; application to P-N junction, Schottky barrier, bipolar transistor, and field effect transistors.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 311, 331; prereq or concur: 321.

**447 Electrical Energy Conversion Laboratory I U 2**

Characteristics of transformers, direct current and alternating current electromechanical energy conversion devices; inspection of power system facilities.

Au, Wi Qtrs. 1 cl, 1 3-hr lab. Concur: 341.

**481 Professional Aspects of Electrical Engineering U 1**

History and impact of electrical engineering on society; IEEE code of ethics; professional responsibilities; engineering as social experimentation; safety and risk; case studies; whistle blowing; global awareness.

Au Qtr. 1 cl. This course is graded S/U. Not open to students with credit for 580.

**489 Professional Practice in Industry U 2**

Preparation of a comprehensive report based on actual employment experience in a co-op job in industry.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to co-op program in elec eng. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**513 Transmission and Radiation U G 3**

Terminated transmission lines, Smith chart, rectangular waveguides, surface waves, optical fibers, antennas, radiation.

Au, Wi, Sp qtrs. 3 cl. Prereq: 312.

**517 Electromagnetics Laboratory U 2**

Transmission line parameters; attenuation, magnitude and phase of voltage and current on lines; reflected waves; waveguide characteristics and techniques; antenna patterns and impedances; optical devices.

Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq or concur: 513.

**551 Introduction to Feedback Control Systems U G 3**

Feedback systems; modeling; stability; Routh Criterion; root locus; Bode plots; lead/lag and PID controller design.

Au, Sp Qtrs. 3 cl. Prereq: 352.

**557 Signals and Systems Laboratory U 2**

Laboratory study of signal processing, control systems and their components, computer-controlled instrumentation, sampled data systems, analog and digital control.

Au, Wi Qtrs. 1 cl, 1 3-hr lab. Prereq: 551.

**561 Digital Circuit Design U G 3**

An introduction to digital circuit design using integrated circuit components; gates, counters, latches, ALU, shift registers, multiplexers, memories, etc.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 206, 261, and concur 320 or 321.

**562 Theory and Design of Digital Computers U G 3**

Design of general purpose digital computers including arithmetic and control units, input/output, memory subsystems, interrelation of hardware and software systems, and introduction to microprogramming.

Au, Sp Qtrs. 3 cl. Prereq: 265 or Cptr/Inf 360, and Elec Eng 561. Not open to students with credit for 760.

**567 Microprocessor Laboratory I U 2**

Self-paced laboratory in which the concept of a microprocessor is explored by designing and building simple systems, using ROM emulation as the development tool.

Au, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq: 265 or equiv.

**582 Electrical Engineering Design I U 3**

Presents fundamentals of engineering designing and leads to development of a specific design proposal. Technical communication skill, both written and oral, are employed throughout.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 321 and Elec Eng major.

**600 Introduction to Digital Signal Processing U G 3**

Properties of discrete-time signal processing systems; filter structures; sampling; A/D and D/A conversion; digital filter design; discrete Fourier transform; applications.

Wi Qtr. 3 cl. Prereq: 352. Not open to students with credit for 700.

**601 Communication Theory U G 3**

An introductory course in communication theory including both analog and digital modulation concepts and introductory noise concepts.

Au, Wi Qtrs. 3 cl. Prereq: 352.

**607 Communication Laboratory U G 2**

Laboratory in the areas of communication theory and signal processing.

Au, Wi Qtrs. 1 cl, 1 3-hr lab. Concur: 601.

**624 Power Electronic Devices and Circuits U G 3**

A study of general laws and constraints in power electronic circuits, switching characteristics, generic converter topologies and their operation principles, desirable switching trajectory, snubber circuits.

Au Qtr. 3 cl. Prereq: 321 or equiv.

**628 Electronic Devices and Circuits Laboratory II U G 2**

A laboratory study of converter circuits, switching characteristics of power transistors and thyristors, and effects of circuit elements on the behavior of power converters.

Au Qtr. 1 cl, 1 3-hr lab. Prereq: 327; concur: 624.

**637 Solid State Microelectronics Laboratory I U G 4**

Introduction to laboratory techniques including oxidation, chemical processes, photolithography, diffusion, and metalization; fabrication and measurements of planar diodes and transistors.

Au Qtr. 2 cl, 1 4-hr lab. Prereq: 432 or equiv with written permission of instructor.

**638 Solid State Microelectronics Laboratory II U G 4**

Design and fabrication of integrated circuit projects such as amplifiers, NMOS, CMOS, and bipolar digital circuits.

Sp Qtr. 2 cl, 1 4-hr lab. Prereq: 637.

**640 Industrial/Commercial Power Systems U G 3**

An introduction to power system design for commercial buildings and industrial plants; legal and economic considerations; equipment specifications and ratings; design practice; fault calculations, protection, and coordination; grounding; and illumination design.

Sp Qtr. 3 cl. Prereq: 340 or 341.

**643 Electric Machines U G 3**

Magnetic circuits, transformers, electromechanical energy conversion principles, concepts of rotating machines, direct current machines, synchronous machines, and induction machines; steady state and transient analysis.

Au Qtr. 3 cl. Prereq: 341.

**645 Engineering Economics and Applications to Power Systems U G 3**

Basic financial-mathematical concepts, engineering economics, evaluation of multiple alternatives, time period considerations, cost evaluations, electric utility rate economics, public utility regulation, economics of generation and transmission, and case studies and examples.

Au Qtr. 3 cl. Prereq: 541.

**647 Electrical Energy Conversion Laboratory II U G 2**

Linear and rotary electromechanical devices in the steady state and in the transient state; automatic excitation control of one-machine infinite-bus system.

Wi Qtr. 1 cl, 1 3-hr lab. Prereq: 547 or equiv.

**650 Linear Systems with Random Inputs U G 3**

Basic introduction to random processes, correlation functions, spectral density, and the design of optimum filters by several methods in the time and frequency domains.

Au Qtr. 3 cl. Prereq: 550 and Stat 421. Not open to students enrolled in, or having credit for 805.

**667 Digital Logic Laboratory U G 3**

A self-paced laboratory involving the design of basic computer components such as registers, arithmetic logic units, counters, and the design of sequential machines.

Au, Wi, Sp Qtrs. 2 cl, 1 3-hr lab. Prereq: 327 and 561. Not open to students with credit for 767.

**693 Individual Studies in Electrical Engineering U G 1-18**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**694 Group Studies in Electrical Engineering U G 1-18**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs.

**700 Digital Signal Processing U G 3**

Analysis and design of discrete-time systems, sampling theory, the z-transform, the discrete Fourier Transform, the fast Fourier transform, digital filter design techniques, and finite register length effects in digital filters.

Au Qtr. 3 cl. Prereq: 352.

**701 Communication Networks U G 3**

Introduction to modern communication networks; topics include data traffic, queuing models, multiaccess channels, and selected applications.

Sp Qtr. 3 cl. Prereq: Stat 421 or equiv.

**702 Communications Systems U G 3**

A study of communications systems with emphasis on signal-to-noise characteristics of various modulation and coding techniques.

Sp Qtr. 3 cl. Prereq: 601.

**705 Digital Communication Systems U G 3**

Reliable transmission and reception of digital data including study of baseband transmission and modulation methods employed in digital communication systems; introduction to information theory and algebraic coding.

Wi Qtr. 3 cl. Prereq: 601 or equiv with written permission of instructor.

**706 Medical Imaging U G 3**

Introduction to medical imaging techniques, including data collection and image processing for projection X-ray, computed tomography, ultrasonic, and magnetic resonance.

Sp Qtr. 3 cl. Prereq: 352 or permission of instructor.

**710 Microwave Circuits U G 4**

Theory of microwave passive devices, transformers, couplers, filters, resonators, and circulators; computer-aided design of microwave circuits; microstrip realization and testing with a network analyzer.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 513 or equiv.

**711 Radiation from Antennas U G 3**

Dipole, loop, aperture, reflector, lens, surface wave, and other antennas; array theory; radiation resistance, directivity, and input impedance.

Wi Qtr. 3 cl. Prereq: 513 or equiv.

**712\* Microwave Optics U G 3**

Geometrical optics, physical optics, aperture radiation integrals, minimum range requirements, stationary phase, sidelobes, aperture blocking, radar echo area, and geometrical theory of diffraction.

Au Qtr. 3 cl. Prereq: 719.

**713 Elements of Radio Wave Propagation U G 3**

Practical methods for predicting tropospheric, groundwave, and ionospheric propagation, including refraction, reflection, and extinction effects.

Sp Qtr. 3 cl. Prereq: 513 or equiv.

**714 Radar Systems U G 3**

Study of radar systems and their applications; emphasis on measurement of target parameters by means of radar with applications to ranging, tracking, mapping, and navigation.

Au Qtr. 3 cl. Prereq or concur: 601 or equiv or concur. Not open to students with credit for 704.

**716 Optics with Laser Light U G 4**

Theoretical description of plane, spherical waves; holography; diffraction; Gaussian beams; optical spatial filtering; matrix ray optics; laboratory experience.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 352 and 513.

**719 Electromagnetic Field Theory I U G 3**

Fundamental laws of electrodynamics; dielectric, magnetic, and conductive media; energy, force, and momentum; radiation, scattering, and dispersion; interior boundary value problems; and Green's functions.

Au Qtr. 3 cl. Prereq: 513 or equiv.

**720 Circuit Theory of Solid State Devices U G 3**

Advanced circuit theory of solid-state devices.

Wi Qtr. 3 cl. Prereq: 322.

**721 Advanced Electronic Circuits U G 3**

Integrating and differentiating circuits; counting circuits; timing circuits; pulse circuits; wave-forming and wave-shaping circuits.

Sp Qtr. 3 cl. Prereq: 322.

**722 Active Network and Logic Circuit Design by Digital Computer U G 3**

Study of computer aided network design programs, topological matrices; active device modeling, linear, and non-linear solutions; logic circuit analysis and design by digital computer.

Au Qtr. 3 cl. Prereq: 322.

**723 Microwave Transistor Amplifiers and Oscillators U G 4**

Design principles of microwave transistor amplifiers and oscillators; low-noise, power, and broadband amplifiers; and computer-aided design, microstrip realizations, and testing in the laboratory.

Wi Qtr. 3 cl. 1 3-hr lab. Prereq: 512 and 522; or permission of instructor.

**731 Fiber Optics U G 3**

Waveguiding in optical fibers, fiber losses, coupling and power launching, detectors, sources, noise, receiver and transmitter design, link analysis, introduction to fiber sensors.

Wi Qtr. 3 cl. Prereq: 312 and 321 or permission.

**732 Quantum Electron Devices: Lasers U G 4**

Atomic interaction with radiation, cavities with gain, pumping techniques, amplifier, and oscillator configurations.

Sp Qtr. 4 cl. Prereq: 432 and 513 or permission of instructor.

**733 Parametric Electronics and Nonlinear Optics U G 3**

Coupled mode theory of wave interactions; acousto-optical devices; nonlinear optical phenomena; optical parametric processes; tunable optical oscillator; high power laser interactions.

Wi Qtr. 3 cl. Prereq: 432 and 513 or permission of instructor..

**734\* Solid State Electronics Design and Technology I U G 3**

Discrete and integrated circuit device design and silicon technologies, VLSI processing procedures, and device measurements for process development.

Wi Qtr (even years). 3 cl. Prereq: 432 or permission of instructor.

**735\* Compound Semiconductor Electronics Design and Technology U G 3**

III-V compound semiconductor device fabrication technology; epitaxy, doping, bandgap engineering; GaAs and InP high speed devices and IC design approaches; testing and failure mechanisms.

Wi Qtr (odd years). 3 cl. Prereq: 432 or permission of instructor.

**740 Electric Power System Analysis U G 3**

A study of major components and steady state operation of electric power systems; network concepts, symmetrical components, asymmetrical systems, power flow, and system stability.

Au Qtr. 3 cl. Prereq: 341.

**741 Electric Power System Protection U G 3**

A study of methods and devices used in system protection; protection systems, relay types, pilot wire and carrier systems, relay response, protection of machines, transformers, buses, and lines; instrument transformers; and modern trends in protection.

Wi Qtr. 3 cl. Prereq: 740.

**742 Electric Power System Transients U G 3**

A study of transient operation of electric power systems; circuit interruption, switching transients, and modern circuit breakers; traveling waves, reflections, conductor systems, and insulation coordination; and neutral grounding.

Sp Qtr. 3 cl. Prereq: 341 or 740.

**743 Control of Electric Machines U G 3**

Modern devices for control of electric machines, converters, and inverters; voltage, speed, and frequency control; and ratings and selection of electric machines.

Wi Qtr. 3 cl. Prereq: 351; concur: 341.

**744 Modern Control of Industrial Electrical Machinery U G 3**

Dynamic models of three-phase AC motors and power devices; PWM inverters; AC and DC drives; and vector control, flux weakening control, and scalar control of electric machines.

Sp Qtr. 3 cl. Prereq: 743.

**745 Reliability in Electrical Engineering U G 3**

Basic probability and statistics for reliability analysis, basic reliability concepts, combinatorial reliability, Markov processes. Applications to various electrical engineering facilities; analysis of maintenance, outages, failures.

Wi Qtr. 3 cl. Prereq: 341.

**746 Power System Control and Stability U G 3**

Digital computer modeling, stability, and control representation of excitation and governor systems, analysis of transient stability of multimachine systems.

Sp Qtr. 3 cl. Prereq: 351 and 740.

**747 High Voltage Engineering and Laboratory I U G 4**

Dielectric strength and breakdown of gases, liquids, and solids, electric field design problems in power system equipment; laboratory study of high voltage insulation.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 341.

**748 Power System Laboratory U G 2**

A laboratory study of power system problems from the areas of transformers, machines, and system protection; and visits of electric power plants and high voltage power system facilities.

Sp Qtr. 1 cl, 1 3-hr lab. Prereq: 547, and 643 or 740 or 741.

**749 High Voltage and Engineering Laboratory II U G 4**

Electric field and insulation design problems, insulation aging, corona investigations, power system component design aspects, surge voltage phenomena, laboratory experiments.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 341 or 747.

**750 Linear System Theory U G 3**

Canonical realization of transfer functions; state observability and controllability; state feedback and asymptotic observers; reduced order observers; direct transfer function design.

Au Qtr. 3 cl. Prereq: 352; 551 or equiv; or permission of instructor.

**751 Analysis and Design of Digital Control Systems U G 3**

An introduction to the analysis and design of digital control systems using state-variable methods, controllability and observability, control law design, feed-forward design, system identification, optimal control, and dynamic programming.

Sp Qtr. 3 cl. Prereq: 755.

**752 Feedback Control Systems U G 3**

Application of feedback principles to control systems, system equations, performance criteria, compensation, and multivariable systems.

Au, Wi Qtrs. 3 cl. Prereq: 551.

**754 Nonlinear Systems U G 3**

Analysis of nonlinear control systems; Lyapunov stability, numerical methods, phase-plane techniques, describing functions, and linearization via feedback.

Sp Qtr. 3 cl. Prereq: 551 or 752, or equiv.

**755 Digital Control Systems U G 3**

Difference equations, z-transforms, digital filtering, sampling quantization, analog-digital conversion; block diagramming to model digital and hybrid control systems.

Wi Qtr. 3 cl. Prereq: 551 or equiv.

**757 Control Laboratory I U G 3**

Laboratory study of feedback control systems with experiments analyzing different types of plants, transducers, and control techniques; emphasis on real-time computer control.

Wi, Sp Qtrs. 2 cl, 4 lab hrs. Prereq: 265 or equiv, 557, and prereq or concur: 755.

**758 Control Laboratory II U G 3**

Laboratory study of advanced feedback control techniques as applied to nonlinear and multi-output systems under computer or microprocessor control.

Au Qtr. 1 1-hr cl, 1 4-hr lab. Prereq: 757. Limited to 10 students.

**761 Switching Circuit Theory U G 3**

Minimization of multiple output combinational circuits, computer-aided design, state minimization, asynchronous sequential machines, state assignment, transient analysis.

Wi, Sp Qtrs. 3 cl. Prereq: 562 or Cptr/Inf 675.

**762 Theory and Design of Digital Computers II U G 3**

Detailed design of major components of modern computer architecture; design of controllers, ALUs, floating point units, caches, and memory management units using a hardware description language.

Au, Wi Qtrs. 3 cl. Prereq: 561 or equiv, and 562 or Cptr/Inf 675 or equiv.

**763 Introduction to Real-Time Robotics Systems U G 3**

Components of a Robot System, types, electronic system components, and analog-digital conversion; error analysis; hardware and software.

Au Qtr. 3 cl. Prereq: 265 or equiv, 551.

**765 Microcomputer Structures U G 3**

An investigation of current microcomputer structures with emphasis on hardware implementation of I/O, direct memory access, interrupts, memory, and microprogramming.

Au, Wi Qtrs. 3 cl. Prereq: 562.

**766 Computer Interfacing and Protocols U G 3**

A hardware oriented course dealing with the electrical principles of computer interfaces for digital communication including time domain effects, serial/parallel interfaces, modems, and associated protocols.

Wi Qtr. 3 cl. Prereq: 561 and 562 or CIS 675 or equiv.



**769 Microprocessor Laboratory U G 3**

Open shop design in which students design, construct, debug, and program microprocessor systems based on currently available microprocessors, memories, I/O devices, etc. using sophisticated microprocessor development systems.

Wi, Sp Qtrs. 2 cl, 1 3-hr lab. Prereq: 561, 567 and 765 or equiv with permission of instructor.

**770 Biological Control Systems U G 3**

Application of control theory to the analysis of biological control systems such as visual, muscular, thermal, and cardiovascular; receptor, nerve axon, and muscle transfer characteristics.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 550 or equiv; 670 and permission of instructor, or Zoology 522.

**779 Introduction to Artificial Neural Network Methods U G 3**

Survey of fundamental methods and techniques of artificial neural networks: single and multi-layer networks; associative memory and statistical networks; supervised and unsupervised learning.

Sp Qtr. 3 cl. Prereq: 760 or Cptr/Inf 730. Not open to students with credit for CIS 779. Cross-listed in Computer and Information Science.

**793 Individual Studies in Electrical Engineering U G 1-18**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs.

This course is graded S/U.

**800 Stochastic Digital Signal Processing G 3**

Signal processing techniques for discrete-time stochastic signals; optimal filtering and prediction, parametric and non-parametric spectrum estimation, recursive filtering.

Wi Qtr. 3 cl. Prereq: 700; 650 or 804.

**803 Coding Theory G 3**

Error detection and correction codes for communications and data storage, finite fields and polynomial algebra, linear codes, Hamming and Reed-Mueller codes, cyclic codes, burst error correction codes, interleaving, Fire codes, and Reed-Solomon codes.

Sp Qtr. 3 cl. Prereq: 705, 762 or equiv with written permission of instructor. Not open to students with credit for 863.

**804 Signal Analysis G 3**

Analysis of continuous time and discrete time signals, Fourier transforms and series, z-transforms, Hilbert transforms, distribution theory, analytic signals, cyclic convolution, and energy and power spectral densities.

Au Qtr. 3 cl. Prereq: 352 and 702 or equiv with written permission of instructor.

**805 Random Processes in Electrical Engineering G 3**

Random variables; random processes; autocorrelation; cross-correlation; energy and power spectral densities; Gaussian, Poisson, Markov, and Weiner processes; and random processes in linear systems.

Wi, Qtr. 3 cl. Prereq: 804 and Stat 520.

**806 Signal Detection and Estimation G 3**

Binary and M-ary decision theory; Bayes, minimax, ideal, and Neyman-Pearson detectors; maximum likelihood and maximum a posteriori estimation; and receiver operating characteristics.

Sp Qtr. 3 cl. Prereq: 805.

**807\* Advanced Communication Theory I G 3**

Content changes from year to year; typical topics are minimum mean-square estimation, timing and tracking loops, phase-lock loops, delay-lock loops, signal acquisition, Fokker-Planck techniques, demodulation of angle-modulated signals, and sequential detection theory.

Au Qtr. 3 cl. Prereq: 805.

**810 Electromagnetic Field Theory II G 3**

Solution of Maxwell's equations in time and frequency domains; field theorems; integral representations; eigenfunction solutions; fields of moving charges.

Wi Qtr. 3 cl. Prereq: 719.

**814 Advanced Antenna Theory I G 3**

Method of Moments solution of integral equations of electromagnetic radiation and scattering; applications to conducting and material bodies, apertures, thin wires, microstrip, etc..

Wi Qtr. 3 cl. Prereq: 719.

**815 Advanced Antenna Theory II G 3**

Mutual impedance; moment method, aperture antennas; ground plane effects; horn and reflector antennas; pattern synthesis; antenna measurements.

Sp Qtr. 3 cl. Prereq: 711 and 810.

**817 Advanced Electromagnetic Theory I G 3**

Foundations of the electrodynamics of continuous media; physical implications of the theory; moving sources, boundaries, and media; scalar Green's functions.

Au Qtr. 3 cl. Prereq: 810 or equiv.

**818 Advanced Electromagnetic Theory II G 3**

Vector wave functions and dyadic Green's functions; integral equations and their solution by the moment, variational, and T-matrix methods; application to antenna and scattering problems.

Wi Qtr. 3 cl. Prereq: 817.

**819 Advanced Electromagnetic Theory III G 3**

Use of asymptotic methods to obtain high-frequency solutions; geometrical optics and the propagation through inhomogeneous media; geometrical theory of diffraction and its application to antenna and scattering problems.

Sp Qtr. 3 cl. Prereq: 818.

**820 Analog VLSI Design G 3**

Introduction to analog VLSI design with emphasis on the hardware implementation of analog signal processing VLSI circuits and systems.

Sp Qtr. 3 cl. Prereq: 720 and 721, or permission of instructor.

**830\* Semiconductor Theory G 3**

Direct-reciprocal lattice, lattice waves and phonon theory, electron state and bandstructure theory, electron dynamics, Fermi-Dirac statistics, transport properties and Boltzmann equation (derivations and applications of drift and diffusion equations), and scattering mechanisms.

Au Qtr (odd years). 3 cl. Prereq: 432 or equiv.

**831\* Semiconductor Device Theory G 3**

Basic semiconductor device current equations, measurement and analysis of interface states, advanced p-n junction theory, avalanche breakdown, metal-semiconductor contacts, MIS capacitors, and short channel devices.

Wi Qtr (even years). 3 cl. Prereq: 432 or equiv.

**832\* High-Speed Semiconductor Devices G 3**

Principles underlying the operation and application of high-speed solid-state active devices, electron transport in high fields, Gunn effect, superlattices, heterostructures, and modulation doped devices.

Sp Qtr (even years). 3 cl. Prereq: 432 or equiv.

**833\* Optical Effects in Materials and Devices G 3**

Static and quasi-static piezoelectric, electro-optic, photo-refractive, acousto-optic and magneto-optic effects and devices based on these effects.

Au Qtr. 3 cl. Prereq: Permission of instructor or concur: 716.

**841 Computer Methods in Power System Analysis G 3**

A study of computer methods in electric power system analysis; incidence and network matrices, algorithms for formation of network matrices, three-phase network matrices, short circuit studies, iterative solution of simultaneous algebraic and differential equations, and power flow and transient stability studies.

Wi Qtr. 3 cl. Prereq: 740.

**842 Economic Operation and Control of Electric Power Systems G 3**

Load modeling and forecasting, automatic generation control, generation scheduling, computer control, state estimation, on-line power flow, and power flow models.

Au Qtr. 3 cl. Concur: 740.

**843 High Voltage Transmission Systems G 3**

High voltage transmission systems, electrical characteristics, corona phenomena, radio and television interference, audible noise, corona loss, electromagnetic field effects, insulation design, siting and route selection, and model studies.

Sp Qtr. 3 cl. Prereq: 740 or 747.

**850 Theory and Design of Feedback Control Systems G 3**

Linear feedback theory, stability, the quadratic regulator, output feedback pole placement and design of servocompensators, and CAD techniques for control systems.

Wi Qtr. 3 cl. Prereq: 750.

**851\* Stochastic Estimation and Control Systems G 3**

Synthesis of systems, both linear and nonlinear, with statistical inputs; Weiner filter; Kalman filter; advanced topics.

Wi Qtr. 3 cl. Prereq: 750 and 650 or 805.

**852\* Adaptive Control G 3**

Adaptive control for linear time-invariant systems; includes indirect and model reference adaptive controllers, plus a discussion of robustness issues in adaptive control.

Wi Qtr. 3 cl. Prereq: 750, 752, and 754.

**853\* Analysis of Nonlinear Systems G 3**

An advanced study of nonlinear control systems; Lyapunov stability, variable structure systems, geometric control theory, averaging methods, singular perturbation analysis.

Au Qtr. 3 cl. Prereq: 754 and 750 or permission of instructor.

**854† Optimal Control Theory G 3**

Optimal control by dynamic programming, Pontryagin's maximum principle and variational methods; minimum time, energy, and fuel problems for linear continuous and discrete systems.

Sp Qtr. 3 cl. Prereq: 750 and 752.

**855 Large Scale Systems G 3**

Computational methods in optimal control and large scale dynamical systems; decentralization hierarchy and their effects on modelling, stability analysis, and optimal controller design and implementation.

Au Qtr. 3 cl. Prereq: 850 and 854.

**856\* Advanced Feedback Control G 3**

Input-output methods, modern frequency domain analysis and design techniques, Youla parametrization, and  $H_2$  and  $H_\infty$  optimization.

Sp Qtr. 3 cl. Prereq: 752 and 850 or permission of instructor.

**861 Fault Tolerant Design of Digital Systems G 3**

Reliable design of digital systems; fault detection; redundancy techniques; diagnosis of failures; automatic test generation and fault simulation; design for testability; and signature analysis.

Au Qtr. 3 cl. Prereq or concur: 761.

**862 Computational Aspects of Robotics G 3**

Study of computer hardware and programming issues involved in applying the mathematical equations that describe robotic mechanisms equipped with sensory inputs.

Sp Qtr. 3 cl. Prereq: 763.

**Radio Astronomy Theory I**

See Astron 862.

**863 Computer Vision G 3**

Computer vision systems, image models, edge detection, feature extraction, segmentatic shape representation, morphology, structural descriptions, object modeling, matching, knowledge bases, semantic knowledge, architectures, and depth perception.

Wi Qtr. 3 cl. Prereq: 650, 700, or equiv, or permission of instructor.

**Radio Astronomy Theory II**

See Astron 863.

**864 Advanced Computer Design G 3**

Parallel computer architectures, pipeline design, multiprocessor design, interprocessor communication, case studies and application examples.

Wi Qtr. 3 cl. Prereq: 761 and 762.

**865 Advanced Sequential Circuit Theory G 3**

State identification and fault detection; finite automata, memory definiteness, and information losslessness; linear sequential machines; finite state recognizers.

Sp Qtr. 3 cl. Prereq: 761 or permission of instructor.

**866 Multisensor Integraton for Intelligent Systems G 3**

Physical sensing devices, multisensor interface, sensor data fusion, object recognition by multisensor integration, and system organization for multisensor integration.

Au Qtr. 3 cl. Prereq: 562 and 763, Math 530 or equiv, and CIS 660.

**870 Biological Systems Modeling I G 3**

Consideration of current literature in the area of biological system modeling; cardio-vascular, and pulmonary systems; computer implementation of models.

Au Qtr. 2 cl, 1 3-hr lab. Prereq: 550, or concur: Physiol 601 or Zoology 522.

**871 Biological System Modeling II G 3**

Modeling of such biological systems as renal or thermoregulatory for parameter identification; digital and analog computer laboratory implementation.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 550, and Physiol 601 or Zoology 522.

**872 Bio-Medical Systems Modeling of Man-Machines G 3**

Systems theory applied to the engineering aspects of the human eye-hand tracking interface comparing computer simulation with experimental data.

Sp Qtr. 3 cl. Prereq: 870 or 871.

**873\* Clinical Instrumentation and Signal Processing G 3**

Basic principles of information transfer and signal processing as applied to clinical health care delivery, such as remote diagnosis, ECG analysis, and telemetry.

Sp Qtr. 3 cl. Prereq: 601 or 764 and 771 or permission of instructor.

**880 Advanced Studies in Electrical Engineering G 1-18**

Su, Au, Wi, Sp Qtrs. 1-3 cl. Repeatable to a maximum of 18 cr hrs.

**881 Seminar in Electrical Engineering G 1-3**

Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**894 Group Studies in Electrical Engineering G 1-18**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs.

**910\* Advanced Antenna Theory III G 3**

Development of the Dyadic Green's function for one and two dimensional periodic structures of arbitrarily oriented elements; application to Phased Arrays with and without scan compensations.

Sp Qtr. 3 cl. Prereq: 711, 810, 815, or permission of instructor.

**917 Advanced Optical Concepts G 3**

Fiber and integrated optics and their applications, optical transfer functions, aberrations, optical thick halograms, numerical optical computing, and liquid crystals.

Wi Qtr. Prereq: 716 or permission of instructor.

**993 Individual Studies in Electrical Engineering G 1-18**

Su, Au, Wi, Sp Qtrs. Individual conf. Repeatable to a maximum of 18 cr hrs.

**999 Research in Electrical Engineering G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Emergency Medicine

108 Means Hall, 1654 Upham Drive, 293-8305

**793 Individual Studies in Emergency Medicine G 1-5**

Research on a basic science or clinical issue in Emergency Medicine (under faculty supervision).

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor and grad standing in the M.S. program in Medical Sciences. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**794 Group Studies in Emergency Medicine G 1-5**

Special Topics in Emergency Medicine.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**850 Seminars in Emergency Medicine G 3**

Discussion of pertinent literature and research in subspecialty disciplines in Emergency Medicine.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Permission of instructor and grad standing in the M.S. program in Medical Sciences.

**999 Research in Emergency Medicine G 1-9**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor and grad standing in the M.S. program in Medical Sciences. This course is graded S/U.

## Engineering

122 Hitchcock Hall, 2070 Neil Avenue, 292-2651

**100 Engineering Survey U 1**

Academic requirements; University procedures, grading system, and resources; overview of engineering academic areas of study and services.

Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: Enrollment in ENG. Not open to students with credit for Agr 100, Arts Col 100, Arts&Sci 100, Home Ec 100, Nat Res 100, and UVC 100.

**194 Group Studies in Engineering U 1-18**

Special topics of general interest to engineering students.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr. hrs.

**195 Women in Engineering U 1**

Discussion of the unique problems facing women engineering students and professionals; resources available to deal with those problems.

Wi, Sp Qtrs. 1 cl. This course is graded S/U.

**198 Introduction to Engineering U 1**

Lectures and discussion of various engineering disciplines: current activities, expectations, responsibilities and future trends.

Au, Sp Qtrs. 2 cl. This course is graded S/U.

**294 Group Studies in Engineering U 1-18**

Special topics of general interest to engineering students.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr. hrs.

## 142 Engineering

### H299 Engineering Honors Seminar U 1

Undergraduate Research Scholars will present oral reports and lead discussion on their specific research projects.

Wi Qtr. 1 cl. Prereq: Participation in ENG Honors Program. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.

### 689 Professional Practice in Engineering U 0

Students complete a cooperative assignment in private industry or for a government agency; assignment is supervised by the employer and monitored and evaluated by the co-op program.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of the Director of the Co-op Program in Engineering. This course is graded S/U.

## Engineering Graphics

240 Hitchcock Hall, 2070 Neil Avenue, 292-7923

### 121 Graphic Presentation I U 3

Presentation of three-dimensional subjects by precise graphics: orthographic, sectional, pictorial, and introduction to computer graphics. Boyer.

Au, Wi, Sp Qtrs. 2 2-hr cl and lab. VPA Admis Cond course.

### 122 Graphic Presentation II U 3

Continuation of 121; elements of descriptive geometry, intersections, and development of surfaces, shade, and shadow. Croft.

Au, Wi, Sp Qtrs. 3 2-hr cl and lab. Prereq: 121. VPA Admis Cond course.

### 141 Engineering Graphics I U 3

Methods of problem solving and algorithmic development; introduction to 3-dimensional orthographic and pictorial visualization and presentation. Wilke.

Su, Au, Wi, Sp Qtrs. 3 2-hr cl and lab. Prereq or concur: Math 150 or equiv. VPA Admis Cond course.

### H141 Engineering Graphics I U 3

Methods of problem solving and algorithmic development, and introduction to 3-dimensional orthographic and pictorial visualization and presentation. Wilke.

Au, Wi Qtrs. 3 2-hr cl, lab. Prereq or concur: selection for honors program and Math 150 or equiv.

### 142 Engineering Graphics II U 3

Graphic problem solving techniques; introduction to computer graphics display methods; development of dimensioning and graphics skills. Britton.

Su, Au, Wi, Sp Qtrs. 3 2-hr cl and lab. Prereq: 141. VPA Admis Cond course.

### 143 Engineering Graphics III U 3

Intermediate interactive computer graphics techniques and graphics conventions; comprehensive engineering problem solving project. Miller.

Su, Au, Wi, Sp Qtrs. 3 2-hr cl and lab. Prereq: 142.

### 166 Engineering Graphics and Problem Solving U 4

Introduction to 3-dimensional visualization and presentation with freehand, manual, and CADD methods; introduction to engineering problem solving and reporting. Meyers.

Su, Au, Wi, Sp Qtrs. 4 2-hr cl. Prereq or concur: Math 150 or better; Status as an engineering major, pre-major, or engineering undecided, or written permission of instructor. Not open to students with credit for 110. VPA Admis Cond Course.

### 167 Problem Solving through Programming for Engineering Calculations and Computer Graphics U 4

Solving engineering problems using computer programming; development of algorithms and program modules; solutions to major problems will be presented in an engineering report format. Miller.

Su, Au, Wi, Sp Qtrs. 4 2-hr cl/lab. Prereq: 166; Prereq or concur: Math 151 or better. Not open to students with credit for 200. VPA Admis Cond Course.

### 204 Technical Drawing U 3

Various systems of size description including precision dimensioning; fastening systems; and organization and preparation of engineering drawings, perspective, and computer graphics. Boyer.

Au, Wi, Sp Qtrs. 2 2-hr cl and lab. Prereq: 121 or written permission of instructor.

### 206\* Architectural Drawing for Residential Buildings U 4

Study of terminology and design considerations for residential buildings; design of residence and preparation of drawings using CADD software. Boyer.

Sp Qtr. 4 2-hr cl and lab. Prereq: 121 or written permission of instructor.

### 294 Group Studies in Engineering Graphics U 1-5

Group studies of specially selected topics.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

### 304 Technical Illustration U 3

Preparation of presentation graphics with emphasis on commercial techniques and design applications. Boyer.

Wi, Sp Qtrs. 2 2-hr cl, lab. Prereq: 121.

### 404 Technical Airbrush Illustration U 3

Preparation of airbrush graphics with emphasis on commercial techniques, materials, and presentations. Boyer.

Au Qtr. 2 2-hr cl, lab. Prereq: 121.

### 410 Computer Graphics U 3

An advanced course in graphics with emphasis on the application of computer-generated graphics to the solution of engineering problems. Miller.

Sp Qtr. 3 cl. Prereq: 166.

### 504 Advanced Technical Airbrush Illustration U 3

Instruction, problems, materials, and graphic presentation.

Sp Qtr. 2 2-hr and individual consulting by arrangement. Prereq: 404 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 593 Individual Studies U G 1-5

Opportunity to pursue special-interest topics not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 640 Solid Modeling in Engineering U G 4

Theory and engineering applications of solid modeling in design, analysis, and manufacturing. Duane.

Su, Sp Qtrs. Prereq: 167, Math 254; Aero Eng 580 or Ceram En 406 or Metal En 250 or Cptr/Inf 541 and/or permission of instructor.

### 694 Group Studies in Engineering Graphics U G 1-5

Special topics in engineering graphics; topics, credit hours, and instructor announced the quarter preceeding the offering.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

### 794 Group Studies U G 1-5

Interdisciplinary topics related to engineering design, graphics, and vision.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

## Engineering Mechanics

209 Boyd Laboratory, 155 West Woodruff Avenue, 292-2731

### 220 Introduction to Solid Mechanics U 5

Vector concepts of static equilibrium for isolated and connected body systems; introduction to response of deformable bodies subjected to axial, flexural, and torsional loads.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Physics 131, En Graph 167 or equiv, Math 254 (or concur), and minimum CPHR of 2.00 or acceptance in an ENG major, or a CPHR equal to or greater than that of intended major. Not open to students with credit for 210 or 215.

### 293 Individual Studies in Introductory Solid Mechanics U 1

Supplemental course for transfer students with credit for statics; topics include the response of deformable bodies subjected to axial, flexural, and torsional loads.

Au, Wi, Sp Qtrs. Arr. Prereq: Credit for 4 hrs of statics. Open only to students seeking transfer credit for 220. Not open to students with credit for 220 or 440. This course is graded S/U.

### 430 Dynamics U 4

Dynamics of particles and rigid bodies; linear and angular motion; work and energy; and single degree of freedom vibration analysis.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 220 or 210 or 215. Not open to students with credit for 410 or 415.

### 440 Strength of Materials U 3

Stress and strain analysis of structural components subjected to unidirectional and combined loadings; pressure vessels, beam deflections, columns.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 220 or equiv. Not open to students with credit for 215 or 420.

### 622 Advanced Strength of Materials U G 4

Mohr's Circle for strain; failure theories; curved beams; bending of non-symmetrical sections; non-circular torsion; beams on elastic foundations; and load-deflection relations by energy methods.

Au Qtr. 4 cl. Prereq: 440 and Math 255 or equivs.

### 627 Experimental Methods in Mechanics U G 3

Static and dynamic strain analysis by electrical gauges; grid techniques; brittle coatings; analogies; reflective photoelasticity in normal and oblique incidence; motion measurements.

Wi, Sp Qtrs. 2 cl, 2 lab hrs. Prereq: 440 or equiv.

**633 Vibrations Laboratory U G 3**

Experiments in vibrations of discrete systems, beams, plates, and shells; stress wave propagation.

Sp Qtr. 2 cl, 2 hrs labs. Prereq: 430, and Math 255 or equiv.

**634 Introduction to Ultrasonics U G 4**

Ultrasonic waves in solids and fluids; ultrasonic generators and systems; physical ultrasonics; applications of ultrasonics.

Au Qtr. 4 cl. Prereq: 440; Math 255 or 256 or 415. Not open to students with credit for Weld Eng 634. Cross-listed in Welding Engineering.

**644 Engineering Fracture Mechanics U G 3**

Fracture and fatigue; stress intensity factors; the stability of cracks; compliance and energy rate analysis; plane stress, plane strain; crack propagation and arrest.

Wi Qtr. 3 cl. Prereq: 440 and Math 512, or equivs.

**662 Introduction to the Mechanics of Composites U G 4**

An introduction to the macromechanical analysis of anisotropic composite structures, including governing constituent equations, strength and stiffness advantages, and failure envelopes.

Au, Sp Qtrs. 4 cl. Prereq: 440 or equiv or permission of instructor. Not open to students with credit for Civil En 662 or Mech Eng 662. Cross-listed in Civil Engineering and Mechanical Engineering.

**694 Group Studies in Engineering Mechanics U G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. The student must register for a specific study area indicated below, and may register for more than one at a time.

A— Experimental Stress Analysis

B— Dynamics

C— Fluid Mechanics

D— Elasticity

E— Strength of Materials

F— Vibrations

G— Plasticity

H— Plates and Shells

I— Continuous Media

J— Fracture Mechanics

K— Biomechanics

L— Ultrasonics

**711 Advanced Engineering Dynamics U G 4**

Three-dimensional kinematics and kinetics of particles and rigid bodies; Lagrangian mechanics; Hamiltonian methods; engineering applications.

Sp Qtr. 4 cl. Prereq: 430 and Math 255, or equivs.

**712\* Energy Principles in Mechanics U G 3**

Theoretical development of energy principles in mechanics; strain energy and complementary energy with related minimal principles; applications to problems in elasticity, dynamics, and vibrations.

Au Qtr. 3 cl. Prereq: 440 and Math 255, or equivs.

**731 Vibrations of Discrete Systems U G 4**

Free and forced vibrations of mechanical systems having lumped mass and elasticity; multiple degrees of freedom; dissipative systems; random vibrations; engineering applications.

Au Qtr. 4 cl. Prereq: 430 and Math 255, or equivs.

**732\* Nonlinear Vibrations U G 3**

Vibrations of damped and undamped systems with nonlinear restoring forces; self-sustained oscillations; application of Hill's equation of stability of non-linear oscillations.

Sp Qtr. 3 cl. Prereq: 731 and Math 255 or equiv.

**734 Vibrations of Continuous Systems U G 3**

Equations of motion for strings, membranes, prismatical bars, and plates for various boundary conditions; approximate methods for complicated shapes; wave propagation in elastic media.

Wi Qtr. 3 cl. Prereq: 430 and Math 255, or equivs.

**740 Elasticity U G 4**

Classical problems in elasticity; St-Venant torsion and bending theory; plane problems in rectangular and polar coordinates; axisymmetric problems.

Au Qtr. 4 cl. Prereq: 440 or equiv, and prereq or concur: Math 512.

**743 Introduction to Continuum Mechanics U G 4**

Continuum mechanics in Cartesian coordinates, analysis of deformation and stress, balance principles, constitutive equations; introductory concepts in viscoelasticity and plasticity.

Sp Qtr. 4 cl. Prereq: 440 and Math 255, or equivs.

**751 Elastic Stability U G 3**

Buckling of struts, rings, arches, and plates; torsional instability; stability criteria, exact and approximate methods.

Au Qtr. 3 cl. Prereq: 440 and Math 255, or equivs.

**754 Plates and Shells U G 4**

Basic equations; classical solutions and approximate methods in the theory of thin plates; Membrane theory of shells of revolution.

Wi Qtr. 4 cl. Prereq: 440 or equiv, and prereq or concur: Math 512.

**762 Structural Composites U G 3**

An introduction to the analysis and design synthesis of beams, columns, rods, plates, and panels made of structural composites.

Wi Qtr. 3 cl. Prereq: 662 or Mech Eng 662 or Civil En 662 or permission of instructor. Not open to students with credit for Civil En 762 or Mech Eng 762. Cross-listed in Civil Engineering and Mechanical Engineering.

**763 Introduction to the Finite Element Method U G 4**

Basic concepts, formulation, and application of finite element techniques for numerical solution of problems in structural and continuum mechanics, geotechnical engineering, and water resources engineering.

Au, Wi Qtrs. 4 cl. Prereq: En Graph 167 or equiv, and Civil En 406 or Math 568 or equiv. Not open to students with credit for Civil En 763. Cross-listed in Civil Engineering.

**770\* Biomechanics U G 3**

Discrete mass and continuum mechanics; description of biological materials; biodynamics of limb and gross body motions; various models for injury to head, neck and torso.

Wi Qtr. 3 cl. Prereq: 440 or equiv, and Math 415 or 512, or permission of instructor.

**793 Individual Studies in Engineering Mechanics U G 2-5**

See 694 for topics.

Su, Au, Wi, Sp Qtrs. Prereq: 711, 731, 740, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**800\* Methods of Engineering Analysis G 3**

Solution of boundary value, eigenvalue, and initial value problems arising in mechanics by approximate methods; weighted residual and stationary functional methods.

Au Qtr. 3 cl. Prereq: 10 cr hrs of 700-level courses in eng mech and Math 512 or equiv.

**833\* Elastic Wave Propagation G 3**

Dispersion and group velocity; waves in extended media; propagation and reflection in half space; Lamb problem; waves in plates and rods by exact theory scattering of waves.

Au Qtr. 3 cl. Prereq: 731 or 734.

**835\* Random Vibrations G 3**

Description of random processes; statistical properties of the response of mechanical systems; optimization of systems subjected to random inputs; instrumentation.

Au Qtr. 3 cl. Prereq: 731.

**839 Finite Element Method in Engineering Science G 5**

Approximation of boundary value and initial value problems; variational methods, hybrid and mixed method; convergence and accuracy of finite element approximations; recent developments, advanced applications.

Sp Qtr. 5 cl. Prereq: 763 or Civil En 763, and Math 601 or equiv. Not open to students with credit for Civil En 839. Cross-listed in Civil Engineering.

**840\* Theory of Continuous Media G 3**

Equilibrium, compatibility, and strain displacement relationships for a general continuum; constitutive equations for problems of elasticity, fluid dynamics, and inelasticity.

Au Qtr. 3 cl. Prereq: 740.

**843\* Advanced Elasticity G 3**

Complex variable methods; anisotropic elasticity; three-dimensional elasticity; mixed boundary value problems; variational methods.

Wi Qtr. 3 cl. Prereq: 740.

**844 Advanced Fracture Mechanics G 3**

Treatment of advanced topics in fracture mechanics; elastic-plastic fracture, dynamic crack propagation and arrest, time dependent fracture, fracture of composites, and fatigue crack growth.

Sp Qtr. 3 cl. Prereq: 644 or permission of instructor.

**847\* Theory of Plasticity G 3**

Plastic range stress-strain relations; elasto-plastic behavior of beams and trusses; torsion of prismatic bars; plane strain; shear lines; limit analysis.

Wi Qtr. 3 cl. Prereq: 740 and Math 512.

## 144 Engineering Mechanics

### 855+ Advanced Shells G 3

Differential geometry of surface; general equations for arbitrary shell; solutions to membrane and bending equations.

Sp Qtr. 3 cl. Prereq: 754.

### 862 Advanced Mechanics of Structural Composites G 3

An introduction to current important topic areas in structural composites; among these topics are fracture mechanisms and models, energy method modeling, dynamic structural response, and numerical modeling schemes.

Sp Qtr. 3 cl. Prereq: 762 or Mech Eng 762 or Civil En 762 or permission of instructor. Not open to students with credit for Mech Eng 862 or Civil En 862. Cross-listed in Mechanical Engineering and Civil Engineering.

### 864\* Theory of Viscoelasticity G 3

Basic concepts of time dependent inelastic behavior; viscoelastic constitutive laws; correspondence principles; quasi-static and dynamic problems.

Sp Qtr. 3 cl. Prereq: 740.

### 889 Seminar in Engineering Mechanics G 1

Lectures and discussions covering a range of topics, presented by staff, graduate students, and guest speakers.

Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 6 cr hrs.

### 894 Group Studies in Engineering Mechanics G 2-5

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. The student must register for a specific study area indicated below, and may register for more than one at a time.

A— Experimental Stress Analysis

B— Dynamics

C— Fluid Mechanics

D— Elasticity

E— Strength of Materials

F— Vibrations

G— Plasticity

H— Plates and Shells

I— Continuous Media

J— Fracture Mechanics

K— Biomechanics

L— Ultrasonics

### 993 Individual Studies in Engineering Mechanics G 2-5

See 894 for topics.

Su, Au, Wi, Sp Qtrs. Prereq: Evidence of sufficient background in area of study chosen and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 999 Research in Engineering Mechanics G Arr

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## English

421 Denney Hall, 164 West 17th Avenue, 292-6065

### 020 Beginning Intensive English as a Second Language U 0

Intensive instruction in English as a second language for students at a beginning level of proficiency; listening, speaking, structure, reading, and writing. Holschuh, Director.

Su, Au, Wi, Sp Qtrs. 5 5-hr cl. Prereq: Admission to American Language Program and approval of ALP director. Repeatable for 2 qtrs. This course is graded S/U.

### 021 Elementary Intensive English as a Second Language U 0

Intensive instruction in English as a second language for students at an elementary level of proficiency; listening, speaking, structure, reading, and writing. Holschuh, Director.

Su, Au, Wi, Sp Qtrs. 5 5-hr cl. Prereq: Admission to American Language Program and approval of ALP director. Repeatable for 2 qtrs. This course is graded S/U.

### 022 Intermediate Intensive English as a Second Language U 0

Intensive instruction in English as a second language for students at an intermediate level of proficiency; listening, speaking, structure, reading, and writing. Holschuh, Director.

Su, Au, Wi, Sp Qtrs. 5 5-hr cl. Prereq: Admission to American Language Program, approval of ALP director, and completion of 021 or equiv. Repeatable for 2 qtrs. This course is graded S/U.

### 023 Advanced Intensive English as a Second Language U 0

Intensive instruction in English as a second language for students with advanced proficiency; listening, speaking, structure, reading, and writing, with emphasis on English for academic purposes. Holschuh, Director.

Su, Au, Wi, Sp Qtrs. 5 5-hr cl. Prereq: Admission to American Language Program, approval of ALP director and completion of 022 or equiv. Repeatable for 2 qtrs. This course is graded S/U.

### 052 Basic Writing and Reading I U 5

First course in a two-course sequence that integrates basic reading and writing in preparation for English 110 or 111. Duffey, Director.

Su, Au, Wi, Sp Qtrs. 5 cl or 2 2-hr cl. Not open to students with credit for 060, 110, or 111. Credit will not count toward graduation in any degree program.

### 053 Basic Writing and Reading II U 5

Second course in a two-course sequence in preparation for English 110 or 111. Duffey, Director.

Su, Au, Wi, Sp Qtrs. 5 cl or 2 2-hr cl. Prereq: 052. Not open to students with credit for 060, 110, or 111. Credit will not count toward graduation in any degree program.

### 104 Basic Spoken English for International Graduate Teaching Associates U 5

Practice of basic oral and aural English language skills for non-native speakers. Sarwark, Director.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Placement test or recommendation of director. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 105 Classroom English for International Graduate Teaching Associates U 5

Practice of spoken and pedagogical skills for effective classroom teaching by non-native speaking graduate teaching associates. Sarwark, Director.

Su, Au, Wi, Sp Qtrs. 3 1-1/2-hr cl, 1 1-hr indiv conf. Prereq: Successful completion of 104 and/or Sph/Hrng 035; or placement test; or recommendation of director. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 106 General English as a Second Language U 5

Review of English structure for non-native speakers of English; major emphasis is on writing, with attention also to development of oral-aural skills.

Su, Au, Wi, Sp Qtrs. Prereq: Placement test or recommendation of director. Not open to students having earned a D or above in 071, 072, or 073.

### 107 Advanced English as a Second Language U 5

Reviews advanced English patterns with emphasis on their use in writing essays.

Su, Au, Wi, Sp Qtrs. Prereq: Placement test or grade of D or above in 106. Not open to students having earned a D or above in 072 or 073.

### 108 Academic Writing in English as a Second Language U 3

Attention given to problems of structure and diction appropriate to extended treatment of abstract topics.

Prereq: Placement test or grade of D or above in 107. Not open to students having earned D or above in 073.

#### 108.01 Undergraduates

Idiomatic writing of themes, reports, and examinations. Intended for undergrads.

#### 108.02 Advanced Undergraduates and Graduates

Idiomatic writing of reports, examinations, and theses. Intended for advanced undergrad and grad students.

### 110 First-Year English Composition U 5

Training in the fundamentals of expository writing, as illustrated in the student's own writing and in the essays of professional writers. Duffey, Director.

Su, Au, Wi, Sp Qtrs. No prereq except when testing determines 052-053, 060, 106, 107, or 108.01 to be required. Not open to students with credit for English composition courses numbered 110-305. This course is available for EM credit only through the AP program. GEC/LAR course.

W—Intensive practice in the fundamentals of expository writing. Taught in conjunction with English 193. Duffey, Director. Prereq: Placement level 5.

### H110 Honors First-Year English Composition U 5

Intensive training in the fundamentals of writing for selected students, as illustrated in the student's own writing and in the essays of professional writers.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 28 or above on the English section of the ACT or 660 on the verbal section of the SAT. Not open to students with credit for English composition courses numbered 110-305. GEC/LAR course.

### 111 Composition and Literature U 5

Fundamentals of expository writing, as illustrated in the student's own writing and in literary models exemplifying clear thinking and writing. Duffey, Director.

Su, Au, Wi, Sp Qtrs. 5 cl. No prereq except when testing determines 052-053, 053, 060, 106, 107, or 108.01 to be required. Not open to students with credit for English composition courses numbered 110-305. GEC/LAR course.

**H111 Honors Composition and Literature U 5**

Intensive training in the fundamentals of expository writing for selected students, as illustrated in the student's own writing and in professional literary models.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 28 or above on the English section of the ACT exam or 660 on the verbal section of the SAT. Not open to students with credit for English composition courses numbered 110-305. GEC/LAR course.

**H167 First-Year Writing Seminar in the Humanities U 5**

Intensive critical reading and writing concerning central issues in the humanities.

Au, Wi, Sp Qtrs. Prereq: A score of 4 or 5 on the Advanced Placement Test, which earns EM credit for 110. GEC/LAR course.

**193 Individual Studies U 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Fr standing and permission of Director of Freshman English. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**General Prerequisites for Courses Numbered 200 and 300**

*Unless otherwise indicated, the prerequisite for 200- and 300-level courses is English 110 or 111 or equivalent.*

**201 Selected Works of British Literature: Medieval through 1800 U 5**

An introductory critical study of the works of major British writers from 800 to 1800.

Su, Au, Wi, Sp Qtrs. Prereq: 110 or 111 or equiv. Not open to students with credit for 283 or 284. Required of English majors. BER/GEC/LAR course.

**202 Selected Works of British Literature: 1800 to the Present U 5**

An introductory critical study of works of major British writers of the 19th and 20th centuries.

Su, Au, Wi, Sp Qtrs. Prereq: 110 or 111 or equiv. Not open to students with credit for 284 or 285. Required of English majors. BER/GEC/LAR course.

**220 Introduction to Shakespeare U 5**

Study of selected plays designed to give an understanding of drama as theatrical art and as an interpretation of fundamental human experience.

Su, Au, Wi, Sp Qtrs. H220 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 110 or 111 or equiv. Prereq for H220: 110 or 111 or equiv, and enrollment in an honors program. BER/GEC/LAR course.

**260 Introduction to Poetry U 5**

Designed to help students understand and appreciate poetry through intensive study of a representative group of poems.

Su, Au, Wi, Sp Qtrs. H260 (honors) may be available to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course.

**261 Introduction to Fiction U 5**

Intensive study of a number of short stories and novels to acquaint the general student with some of the important themes and techniques of fiction.

Su, Au, Wi, Sp Qtrs. H261 (honors) may be available to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course.

**262 Introduction to Drama U 5**

A critical analysis of selected dramatic masterpieces from Greek antiquity to the present, designed to clarify the nature and major achievements of western dramatic art.

Su, Au, Sp Qtrs. H262 (honors) may be available to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course.

**263 Introduction to Film U 5**

Introduction to methods of reading film texts by analyzing cinema as technique, as system, and as cultural project.

1 3-hr cl, 1 2-hr cl. Prereq: 110 or 111 or equiv. BER/GEC/LAR course.

**265 Writing of Fiction I U 5**

Practice in the writing of fiction; analysis and discussion of student work, with some attention to general methods of fiction and the publishing situation. Abbott, Director.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

**266 Writing of Poetry I U 5**

Practice in the writing of poetry; emphasis on the students' own work, with reference to established poetic patterns and established poetry. Abbott, Director.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

**270 Introduction to Folklore U 5**

A general study of the field of folklore including basic approaches and a survey of primary folk materials: folktales, legends, folksongs, ballads, and folk beliefs.

Su, Au, Wi, Sp Qtrs. BER/GEC/LAR course.

**271 Introduction to English Language Study U 5**

An introduction to the grammar, history, and social and regional dialects of the English language.

Au, Wi, Sp Qtrs. Not open to students with credit for 570, 669, 671, 672; or Linguist 201 or 601. BER/GEC/LAR course.

**272 Introduction to Science Fiction U 5**

An introduction to science fiction, especially the 20th-century varieties, with equal emphasis on the literature, its origins, and its social ramifications.

Sp Qtr. Fulfills in part the ASC LAR advanced English composition requirement. BER/LAC course.

**274 Introduction to the History of English U 5**

A study of the historical development of the English language, with emphasis on its outer history, and on the history of words and sentences.

Sp Qtr. Prereq: 110 or 111 or equiv. Not open to students with credit for 672.

**275 Thematic Approaches to Literature U 5**

An introduction to literature through the examination of a major theme as treated in different genres and periods; topic varies quarterly.

Wi Qtr. Fulfills in part the ASC LAR advanced English composition requirement. BER/GEC/LAR course.

**280 The English Bible U 5**

The Bible in English translation, with special attention to its literary qualities, conceptual content, and development within history.

Au, Wi, Sp Qtrs. BER/GEC/LAR course.

**281 Introduction to Afro-American Literature U 5**

A study of representative literary works by black American writers from 1760 to the present.

Wi Qtr. Offered in cooperation with Black Studies. BER/GEC/LAR course.

**290 Colonial and U.S. Literature to 1865 U 5**

Introductory study of significant works of U.S. literature from its Colonial origins to 1865.

Su, Au, Wi, Sp Qtrs. BER/GEC/LAR course.

**291 U.S. Literature: 1865 to Present U 5**

Introductory study of significant works of U.S. literature from 1865 to the present.

Su, Au, Wi, Sp Qtrs. Prereq: 110 or 111 or equiv. Not open to students with credit for 290 before Wi Qtr 1993. BER/GEC/LAR course.

**294† Group Studies U 3-5**

Topic varies from quarter to quarter on subjects not otherwise covered by English courses.

Repeatable to a maximum of 30 cr hrs.

**H296 Honors Seminar: Literature and Intellectual Movements U 5**

Studies in the relationship of works of literature to their general intellectual contexts, involving such topics as Deism, Marxism, Primitivism, Freudian psychology; topic varies quarterly.

Wi Qtr. Prereq: CPHR of 3.00 or better, with 3.50 or better in English, and permission of dept. BER/LAC course.

**303 Research and Term Paper Writing U 5**

Emphasis in researching, analyzing, and documenting secondary material for the formal essay and term paper; assignments incorporate research principles with informative, persuasive, and argumentative writing. Ulman, Director.

Sp Qtr. 5 cl. Prereq: 110 or 111 or equiv with permission of course director, and jr or sr standing.

**304 Business and Professional Writing U 3**

The study of principles and the practice of techniques associated with business and professional writing; emphasis on the style, organization, and conventions appropriate to business letters and reports. Locker, Director.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 110 or 111 or equiv with permission of course director, and jr or sr standing.

**367 Intermediate Essay Writing U 5**

Prereq: 110 or 111 or equiv, and soph standing. Only one decimal subdivision may be taken for credit. Not open to students with credit for 210, 267, H267, 301, 302, 303, 304, or 305. GEC/LAR courses.

**367.01 The American Experience**

An intermediate course that extends and refines expository writing and analytic reading skills, with an emphasis on style and an introduction to documentation, with major topics pertaining to the United States.

Su, Au, Wi, Sp Qtrs.

**367.02 The U.S. Experience as Reflected in Literature**

Discussion, analysis, and writing about issues presented through the diverse voices of U.S. literature.

**367.03 African-American Voices in U.S. Literature**

Discussion, analysis, and writing about issues presented through the diverse voices of African-American literature.

Not open to students with credit for Blk St 367.03. Cross-listed in Black Studies.

**367.04 English in the United States**

Discussion, analysis, and writing about issues related to the use of English in the United States.

**367.05 The U.S. Folk Experience**

Discussion, analysis, and writing about U.S. folk culture with a concentration on individual life stories.

**367.06 Composing U.S. Communities**

Discussion, analysis, and writing about how rhetorical discourse helps to define, sustain, and challenge American society.

**H367 Honors Intermediate Essay Writing U 5**

Only one decimal subdivision may be taken for credit. Not open to students with credit for 210, 267, H267, 301, 302, 303, 304, or 305.

**H367.01 The American Experience**

Intensive course that extends and refines expository writing and analytic reading skills, emphasizes style, introduces documentation; major topics pertain to the United States.

Au, Wi, Sp Qtrs. Prereq: A score of 4 or above on the Advanced Placement Test which earns the incoming student credit for 110 and soph standing. GEC/LAR course.

**373 American and English Literature and Film U 5**

The interrelationship between literary and cinematic art.

Wi Qtr. Not open to students with credit for 273. Fulfills in part the ASC LAR advanced English composition requirement. BER/GEC/LAR course.

**397 Informative Writing U 5**

Intensive advanced training in the art of informative writing.

Su, Au, Wi, Sp Qtrs. Prereq: 110 or 111 or equiv, a 367 writing course, and jr or sr standing. Not open to students with credit for 301.

**398 Critical Writing U 5**

Analysis of poetry, fiction, and drama, and issues in literary studies; intensive practice in writing critical essays in preparation for upper-division course work in English.

Su, Au, Wi, Sp Qtrs. Prereq: 110 or 111 or equiv, a 367 writing course, and a declared English major. Not open to students with credit for 302. Required of English majors; enrollment limited to English majors except by permission of dept. GEC/LAR course.

**405 Introduction to Technical Writing and Editing U 5**

Introduction to technical writing for humanities students.

Wi Qtr. 2 2-hr cl. Prereq: A 367 second writing course.

**467 Writing and Learning U 5**

Intensive study of how writing is learned combined with analysis of student writing and tutoring in the University Writing Center.

Au, Wi Qtrs. 2 2-hr cl. Prereq: 110 or 111 or equiv.

**500-level courses may provide graduate credit only in depts other than English.**

**General Prerequisite for Courses Numbered 500**

*Unless otherwise indicated, the prerequisites for 500- and 600-level courses are 10 credit hours of English courses at the 200 or 300 level or the equivalent work in allied departments or permission of the instructor.*

*Ordinarily all 500- and 600-level courses are offered at least once a year, but quarters of offering vary. Check the English listing in the quarterly Master Schedule of Classes Bulletin.*

**501+ Expository Writing for Graduate Students G 5**

Intensive review of techniques of expository writing, with emphasis on writing research papers. O'Hare, Director.

5 cl. Prereq: Grad standing and permission of instructor on the basis of a diagnostic essay administered on the first day of class. Not a substitute for English 106, 107, or 108. Credit does not apply to the minimum number of cr hrs required for the master's or doctoral degrees.

**513 Introduction to Medieval Literature U G 5**

The study of masterpieces from the Middle Ages, chosen for their values in interpreting medieval culture as well as for their independent literary worth. Fulfills in part the ASC LAR advanced English composition requirement.

**515 Introduction to Chaucer U G 5**

A close study of *Troilus and Criseyde* and *The Canterbury Tales* as introduction to the artist and his period.

Not open to students with credit for 615. Fulfills in part the ASC LAR advanced English composition requirement.

**520 Shakespeare U G 5**

A critical consideration of the art, personality, and achievement of Shakespeare in the light of Renaissance and modern significance.

Fulfills in part the ASC LAR advanced English composition requirement.

**521 The English Renaissance U G 5**

A study of Tudor prose and poetry as they exemplify literary art and as they reflect the creative and inquiring temper of the age.

Not open to students with credit for 621. Fulfills in part the ASC LAR advanced English composition requirement.

**522 Early 17th-Century Literature U G 5**

A study of the poetry and prose of 1600-1660, including the major works of Milton.

Fulfills in part the ASC LAR advanced English composition requirement.

**531 Restoration and Early 18th-Century Literature U G 5**

A study of poetry, prose, and drama from Dryden and the Restoration playwrights to the works of Swift and Pope.

Fulfills in part the ASC LAR advanced English composition requirement.

**535 Literature of the 18th Century U G 5**

A study of the ideas and artistry of the major figures of the 18th century: Swift, Pope, Fielding, Sterne, Boswell, and Johnson.

Fulfills in part the ASC LAR advanced English composition requirement.

**540 Romantic Poetry and Poetics U G 5**

Study of Romantic poetry and poetics: readings in Blake, Wordsworth, Coleridge, Byron, Shelley, Keats, and Mary Shelley.

Fulfills in part the ASC LAR advanced English composition requirement.

**541 Victorian Poetry and Poetics U G 5**

Study of Victorian poetry and poetics; readings in Tennyson, the Brownings, Arnold, the Rossettis, Swinburne, Hopkins, and Hardy.

**542 19th-Century English Novel U G 5**

Readings in a group of major novelists, such as Austen, Dickens, and Thackeray, with special emphasis upon social and humanistic values.

Not open to students with credit for 641. Fulfills in part the ASC LAR advanced English composition requirement.

**543 20th-Century British Fiction U G 5**

A study of the development of British fiction after 1900, with emphasis on such major novelists as Conrad, Joyce, Lawrence, and Woolf.

Not open to students with credit for 643. Fulfills in part the ASC LAR advanced English composition requirement.

**547 20th-Century Poetry U G 5**

A study of 20th-century American and British poetry, with emphasis on such major figures as Frost, Yeats, Stevens, Eliot, Williams, and Auden.

Fulfills in part the ASC LAR advanced English composition requirement.

**549 Modern Drama U G 5**

An historical and critical examination of the major developments, personalities, and achievements in the drama of Europe and America since the advent of Ibsen.

Not open to students with credit for 649. Fulfills in part the ASC LAR advanced English composition requirement.

**550 Colonial and U.S. Literature to 1830 U G 5**

Introduction to selected works of early U.S. and Colonial literature including such writers as Anne Bradstreet, Phillis Wheatley, Benjamin Franklin, Washington Irving, James Fennimore Cooper.

Au Qtr. 2 2-hr cl.

**551 American Renaissance in Literature U G 5**

An introduction to the major American writers of the mid-19th century: Poe, Hawthorne, Melville, Emerson, Thoreau, and Whitman.

Fulfills in part the ASC LAR advanced English composition requirement.

**552 American Literature, 1865-1914 U G 5**

Studies in fiction and poetry emphasizing such major figures as Twain, Howells, James, Dickinson, Robinson, Crane, Dreiser, and Willa Cather.

Fulfills in part the ASC LAR advanced English composition requirement.

**553 20th-Century American Fiction U G 5**

A study of American fiction after 1914, with emphasis on the work of such major figures as Anderson, Fitzgerald, Hemingway, and Faulkner.

Fulfills in part the ASC LAR advanced English composition requirement.

**560 Studies in English and American Poetry U G 5**

Topic varies; examples: the dramatic monologue; epic and mock epic; the religious lyric; narrative poetry.

Repeatable to a maximum of 10 cr hrs. Fulfills in part the ASC LAR advanced English composition requirement.

**561 Studies in English and American Fiction U G 5**

Topic varies; examples: tragedy and irony in the novel; the novel of initiation; the novel and the city; the modern short story.

Repeatable to a maximum of 10 cr hrs. Fulfills in part the ASC LAR advanced English composition requirement.



**562 Studies in English and America Drama U G 5**

Topic varies; examples: the revenge play; Restoration and 18th-century drama; tragedy; the play within the play.

Repeatable to a maximum of 10 cr hrs. Fulfills in part the ASC LAR advanced English composition requirement.

**563 Studies in Contemporary Literature U G 5**

A study of prose and poetry written since approximately 1945.

**564 Studies in a Major Author U G 5**

Topic varies; examples: Austen; Faulkner; Joyce; Pope.

Repeatable to a maximum of 10 cr hrs. Fulfills in part the ASC LAR advanced English composition requirement.

**571 Studies in the English Language U G 5**

Topic varies; examples: American English; the sociology of American dialects; language and style.

Repeatable to a maximum of 10 cr hrs.

**572 Traditional Grammar and Usage U G 5**

An examination of terminology and structures traditionally associated with the study of English grammar and of usage rules, especially problematical ones, governing edited written American English.

**573 Rhetorical Theory and the Analysis of Discourse U G 5**

A study of contemporary rhetorical theories to show how a range of literary and non-literary texts persuades readers to assent or action.

**574 History and Theories of Writing U G 5**

Study of the origins, definitions, and development of writing, with varying perspectives on historical, technological, theoretical, and ideological issues.

**575 Studies in Literary Forms and Themes U G 5**

Topic varies; examples: ironic forms; the Trojan War in English literature; the hero and the anti-hero; pastoralism and romance.

Repeatable to a maximum of 10 cr hrs. Fulfills in part the ASC LAR advanced English composition requirement.

**576 Studies in Critical Theory U G 5**

Study of selected issues or movements in critical theory; topics vary; for example, intention, structuralism and literature, new criticism and the contemporary scene, language and literature.

Repeatable to a maximum of 10 cr hrs.

**577 Studies in Folklore U G 5**

Topic varies; examples: children's folklore; folklore theory; Appalachian folklore; folk song; native American folklore; folk narrative; folklore and popular culture.

Repeatable to a maximum of 10 cr hrs.

**578 Studies in Film U G 5**

Examination of particular topics, themes, genres, or movements in cinema or in the relationship between cinema and literary texts.

Sp Qtr. 1 3-hr, 1 2-hr cl. Prereq: 110, 111, or equiv, and 10 hrs of course work in English at the 200 or 300 level, or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**579 Studies in Non-Fiction U G 5**

Critical analysis of non-fiction written discourse with varied topics, i.e., Victorian prose, American nature writing, business and professional writing, biography and autobiography.

Wi, Sp Qtrs. 2 2-hr cl. Repeatable to a maximum of 10 cr hrs.

**H590 Honors Seminar: Major Periods in Literary History U 5**

Intensive study of one of the major periods of English and American literature; periods vary quarterly.

Prereq: CPHR of 3.00 or better, with a 3.50 or better in English, and permission of dept.

**H590.01 The Middle Ages****H590.02 The Renaissance****H590.03 Neo-Classicism**

Fulfills in part the ASC LAR advanced English composition requirement.

**H590.04 Romanticism****H590.05 The Later 19th Century****H590.06 The Modern Period**

Fulfills in part the ASC LAR advanced English composition requirement.

**592 Women in Literature U G 5**

Close examination from feminist perspectives of literature by or about women; central topic varies, for example, biography or autobiography, women as artists, images, and stereotypes.

Offered in cooperation with Women's Studies. Fulfills in part the ASC LAR advanced English composition requirement.

**597 Issues of the Contemporary World U 5**

Prereq: Sr standing. GEC/LAR course.

**H597.03 Interdisciplinary Perspectives on Current Issues**

Team-taught interdisciplinary and cross-cultural course on the relations among politics, ethics, rhetoric, and law as they confront current practical issues.

Sp Qtr. 2 2-hr cl. Not open to students with credit for Philos H597.03 or Polit Sc H597.03. Cross-listed in Philosophy and Political Science.

**H598 Honors Seminar: Selected Topics in Literature and Literary Interpretation U 5**

Selected problems (themes, movements, genres, and styles) emphasizing continuity and development in English and American literary and linguistic history; topic varies quarterly.

Wi, Sp Qtrs. Prereq: CPHR of 3.00 or better with a 3.50 or better in English, and permission of dept. Repeatable to a maximum of 10 cr hrs.

*600-level courses may provide graduate credit in all depts.*

**General Prerequisite for Courses Numbered 600**

*Unless otherwise indicated, the prerequisites for all 500- and 600-level courses are 10 credit hours of English courses at the 200 or 300 level or the equivalent work in allied departments or permission of the instructor.*

**662 Literary Publishing U G 5**

Theory and practice of editing and publishing literature.

Au Qtr. Prereq: 265 or 266, 5 cr hrs of 500-level literature courses in English, and permission of instructor.

**664 The Writing of Non-Fiction U G 5**

Practice in writing and marketing the contemporary essay, with some attention to writing the non-fiction book.

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**665 Writing of Fiction II U G 5**

Practice in the writing of fiction; continuation of 265 at an advanced level.

Prereq: 265 or equiv and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**666 Writing of Poetry II U G 5**

Practice in the writing of poetry; continuation of 266 at an advanced level.

Prereq: 266 or equiv and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**676 History of Literary Criticism U G 5**

Intensive study of the basic texts in literary criticism from Plato to T. S. Eliot.

**692 Workshop U G 1-8**

Arr. Repeatable to a maximum of 12 cr hrs.

W—This alphabetical subdivision is graded S/U.

**693 Individual Studies U G 1-5**

Students may register for individual directed study under this number for work not normally offered in courses.

Prereq: Sr standing and permission of instructor and of dept undergrad or grad committee. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**General Prerequisites for Courses Numbered 700**

*Unless otherwise indicated, the prerequisites for 700-level courses are 15 credit hours of English courses at the 300 or 500 or 600 levels or the equivalent work in allied departments or permission of the instructor.*

*Ordinarily all 700-, 800-, and 900-level courses are offered at least once a year, but quarters of offering vary. Check the English listing in the quarterly Master Schedule of Classes Bulletin.*

**710 Introduction to Old English Language and Literature U G 5**

The reading of Old English prose with special attention to the language and to cultural background.

**713 Introduction to Middle English Language U G 5**

An intensive study of Middle English phonology, morphology, syntax, and dialectology from 1100-1500, with selected readings in the literature.

**716 The Middle Ages U G 5**

A lecture-survey of Late Middle English literature concentrating on the period 1300-1500.

**726 The Renaissance U G 5**

A lecture-survey of literature of the English Renaissance, 1500-1660.

**736 The Restoration and 18th Century U G 5**

A lecture-survey of English literature between 1660 and 1798.

**746 19th-Century English Literature U G 5**

A lecture-survey of 19th-century English literature, 1798-1900.

**756 19th-Century American Literature U G 5**

A lecture-survey of American literature between 1820 and 1900.

**762 Forms of Drama U G 5**

A lecture-survey of the theory and practice of tragic, comic, and tragicomic forms in the history of drama.

**763 The Writing of Poetry III U G 5**

An advanced course in the writing of poetry.

Prereq: 666 or equiv and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**764 Seminar in the Writing of Non-Fiction U G 5**

An advanced course in the writing of non-fiction.

Prereq: 664 or equiv or doctoral standing; and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**765 Writing of Fiction III U G 5**

An advanced course in the writing of fiction.

Prereq: 665 or grad standing, and permission of instructor. Designed for advanced undergrads and grad students. Repeatable to a maximum of 10 cr hrs.

**766 20th-Century English and American Literature G 5**

A lecture-survey of 20th-century English and American literature.

**770 Approaches and Research Methods in Folklore U G 5**

Bibliography, research, fieldwork methods, and critical approaches for the advanced study of folklore.

Prereq: 15 cr hrs of English courses at the 500 level, or 10 cr hrs in English and 10 cr hrs at the 300-500 level in specified allied depts.

**771† Introduction to the English Language U G 5**

Introduction to the structure of and variation in the English language, with emphasis on both oral and written English.

**772 English Syntax U G 5**

A study of various systems of English grammar, with emphasis on their application to writing and teaching.

Prereq: 271 or 771, or Linguist 201 or 601.

**773 Applied English Phonology U G 5**

A study of English phonology and its application to a variety of literary and non-literary resources.

Prereq: 271, or Linguist 201 or 601.

**774 History of the English Language U G 5**

The historical development of English and its place among the world's languages; emphasis on inner history and outer matrix.

**777† American English U G 5**

Introduction to various aspects of the English language as it is used, and has been used in the continental United States.

Prereq: 271 or 771 or equiv or permission of instructor.

**779 History of Rhetoric U G 5**

History and theory of rhetoric from Aristotle to the 20th century.

Prereq: Grad standing or permission of instructor.

**780 Current Theory and Practice in the Teaching of Writing U G 5**

Modern theories of composition; topics include: invention, style, sentence combining, evaluation, the composing process.

Prereq: Grad standing or permission of instructor.

**H783 Honors Research U 3-5**

A program of reading arranged for each student, with individual conferences, reports, and honors thesis.

Prereq: 4th yr standing; a grade of A in at least half of the English courses taken and an average of B in the remainder; permission of professor under whose supervision the work is to be completed. Open only to candidates for distinction in English who have in their jr yr completed with high grades a program approved by the undergraduate committee. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**790† Foundations of Contemporary Critical Theory U G 5**

Interdisciplinary survey of the theoretical bases of major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.

Prereq: Jr or sr or grad standing. Cross-listed in Comparative Studies in the Humanities, French, German, Italian, and Spanish.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**General Prerequisites for Courses Numbered 800**

30 hrs of courses in English, or 20 hrs in English and 25 hrs in specified allied disciplines. Topics may not be taken which were formerly taken as courses under a different number. Admission to 800-level courses is by permission of a Department of English graduate adviser only.

**800 Introduction to Graduate Study G 5**

Bibliography, research methods, and principles of literary criticism for the advanced study in English.

Required of all MA candidates.

**803 Techniques of Literary Discussion G 2 or 3**

Practical and theoretical aspects of leading and participating in discussion of literary texts.

This course is graded S/U.

**817 Studies in Early Medieval English Literature G 5**

Topics include: Beowulf and its background; Old English poetry exclusive of Beowulf.

Prereq: 710 or equiv. Repeatable to a maximum of 10 cr hrs.

**818 Studies in Later Medieval English Literature G 5**

Topics include: Chaucer; poetry of the alliterative revival; medieval English drama; 15th-century non-dramatic literature.

Repeatable to a maximum of 20 cr hrs.

**820 Studies in Shakespeare G 5**

An intensive consideration of selected problems in the scholarly study of Shakespeare.

Repeatable to a maximum of 10 cr hrs.

**827† Studies in English Renaissance Literature G 5**

Topics include: Renaissance and early 17th-century poetry; Spenser; Renaissance drama; Milton; Renaissance prose.

Repeatable to a maximum of 20 cr hrs.

**837 Studies in Restoration and 18th-Century Literature G 5**

Topics for 1994-95 include: 18th-century novel; Restoration and 18th-century drama; 18th-century literature and culture.

Repeatable to a maximum of 25 cr hrs.

**840 Studies in English Romantic Literature G 5**

Literary romanticism in relation to contemporary intellectual and political movements; topic varies from year to year.

Repeatable to a maximum of 15 cr hrs.

**844 Studies in Victorian Literature G 5**

Topics include: Victorian poetry; 19th-century non-fictional prose; 19th-century novel.

Repeatable to a maximum of 15 cr hrs.

**850 Studies in 19th-Century American Literature G 5**

Topics include: American literature 1865-1914; individual American writers, 1800-1900; the American Renaissance.

Repeatable to a maximum of 20 cr hrs.

**854 Studies in 20th-Century American Literature G 5**

Topics include: 20th-century American fiction; individual 20th-century American writers; 20th-century poetry; 20th-century drama.

Repeatable to a maximum of 20 cr hrs.

**863 Studies in 20th-Century British Literature G 5**

Topics include: 20th-century British fiction; individual 20th-century British writers; modern drama; 20th-century British poetry.

Repeatable to a maximum of 20 cr hrs.

**870 Studies in Folklore G 5**

Intensive study of some particular aspect of folklore.

Prereq: 770 or equiv with written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**871 Studies in the Forms of Literature G 5**

Problems in the criticism of fiction, poetry, or drama.  
Repeatable to a maximum of 20 cr hrs.

**872 Studies in the English Language G 5**

Advanced English language study; topics vary.  
Prereq: 771 or Linguist 601 or equiv with permission of instructor. Repeatable to a maximum of 10 cr hrs.

**876 Studies in Critical Theory G 5**

A review of theory and practice in some of the principal forms of literary analysis; focus on a single theoretical movement or a single critical problem.  
Repeatable to a maximum of 10 cr hrs.

**879 Studies in Rhetoric G 5**

Rhetoric of a particular period; major figures in rhetoric, rhetorical analysis of literature.  
Repeatable to a maximum of 10 cr hrs.

**880+ Studies in Composition G 5**

Invention; the composing process and revision; evaluating and responding to writing; discourse analysis.  
Repeatable to a maximum of 10 cr hrs.

**881 Studies in the Teaching of College Composition****881.01 Teaching of Freshman Composition G 3**

Theory and practice in the teaching of freshman composition.  
Required of new GTA's in English.  
This course is graded S/U.

**881.02 Teaching of Remedial College Composition G 5**

Theory and practice in the teaching of remedial college composition.

**881.03 Teaching of College Composition in English as a Second Language G 5**

Research in teaching English as a second language at the college level; materials and pedagogical techniques to use in English as a second language courses.

Prereq: 671 or Linguist 602.01 or permission of instructor.

**881.04 Teaching Business and Professional Communication G 5**

Theoretical foundations of and teaching techniques for major units in business communication, designed to prepare graduate students to do research in and to teach business and professional writing. Locker.

Prereq: 881.01 or permission of instructor.

**890 Interdepartmental Studies in Critical Theory G 5**

Interdisciplinary study of a movement (phenomenology, feminism, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.

Prereq: Background in critical theory recommended. Repeatable to a maximum of 10 cr hrs. Cross-listed in Comparative Studies in the Humanities, French, German, Spanish, and Women's Studies.

**894 Group Studies G 2-5**

Repeatable to a maximum of 15 cr hrs.

**895 Research Methods in Rhetoric and Composition G 5**

Introduction to different types of research designs in composition, culminating with experience in planning a research design.

Prereq: 10 hrs of grad course work in rhetoric and composition or permission of instructor.

**General Prerequisites for Courses Numbered 900**

15 hrs of English at the 800 level. Topics may not be taken which were formerly taken as courses under a different number. Admission to 900-level courses is by permission of an English department graduate adviser only.

**900 The Long Seminar: Research in Literary History, Theory, and Forms I G 5**

Reading and research in literature, its theory and forms, and its intellectual and social backgrounds.

Prereq: At least 25 cr hrs of grad instruction. Repeatable to a maximum of 10 cr hrs. 900 must be followed by 901. Progress graded, credit awarded upon completion of 901.

**901 The Long Seminar: Research in Literary History, Theory, and Forms II G 5**

Continuation of 900.

Prereq: 900. Repeatable to a maximum of 10 cr hrs.

**903 Teaching College English G 5**

Students work as apprentices to faculty members in the planning and execution of an undergraduate English course.

Arr. Prereq: PhD standing and permission of instructor. Repeatable to a maximum of 15 cr hrs with only 5 cr hrs counting toward 45 cr hr course work requirement. This course is graded S/U.

**976 Problems and Methods of Literary Theory G 5**

A study of the basic methodologies and theoretical problems involved in the interpretation and evaluation of literature.

Prereq: 800 or equiv, or permission of instructor.

**980 Bibliography and Method G 5**

For advanced grad students in the methods and tools of literary research.

**982 Textual Criticism and Editing G 5**

Evaluation of literary editorial methods, past and present; training in skills requisite to the textual critic and scholarly editor; practice in textual editing.

Prereq: 980.

**993 Individual Studies G 1-15**

Doctoral students may register for individual study in areas not normally covered by courses.

Prereq: Permission of dept grad committee. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**996 Research in English: Candidacy Examination G Arr**

Research in preparation for Ph.D. exams.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of graduate studies director. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**997 The Dissertation Seminar G 3**

Doctoral candidates present their research-in-progress to faculty and each other.

Prereq: Successful completion of the General Exam. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**998 Research in English: Thesis G Arr**

Research for the master's thesis.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in English: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Entomology

103 Botany and Zoology Building, 1735 Neil Avenue, 292-8209

**100 Insects and Human Affairs U 5**

Principles of the general biology of insects; the role of insects in the natural world with emphasis on its impact on human society. D. C. Smith.

Au, Wi Qtrs. 4 cl, 1 2-hr lab. BER/GEC/LAR course. NS Admis Cond course.

**101 Insect Biology I U 5**

Biological sciences with insects as a model; structure, function, development, and interactions with environment.

Au, Wi Qtrs. 4 cl, 1 2-hr lab. Prereq: Math 075, 076, or 104; or Mathematics Placement Level R. BER/GEC/LAR course.

**102 Insect Biology II U 5**

Continuation of 101; behavior, diversity, insect interactions with humans, pathogens, social insects.

Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 101 or Biology 101. BER/GEC/LAR course.

**200 Insect Studies II: Diversity, Sociality, Ecology, and Control U 5**

Natural history of insects, including form and function, social interactions, communication, diversity, adaptations, ecology, population regulation and methods of control; designed for non-biology majors. Foster and Needham.

Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 100; or Biology 108, 110, 113, or H115; or permission of instructor. Credit does not count toward a major in entomol. BER/LAC/LAR course. NS Admis Cond course.

**294 Group Studies U 1-5**

Group studies in the field of the chosen problem.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**361 Apiculture U 5**

The principles of management of honeybees in the production of honey, wax, package-bees, and queens and in pollinating crops of economic importance. B. Smith.

Sp Qtr. 3 cl, 2 2-hr labs. NS Admis Cond course.

**460 Economic Entomology and Insect Pest Management****460.01 Lecture U 3**

Survey of insects and relatives that affect public health, crops, livestock, and the home; control methods, including principles of integrated pest management. Hall, Hink, Horn, and Needham.

Au, Wi Qtrs. 3 cl. Prereq: Biology 100 or 113 or H115. Not open to students with credit for 460. BER/LAC course.

**460.02 Laboratory, General U 2**

Examination of specimens of main economic orders, and important pest species.

Au, Wi Qtrs. 2 2-hr labs. Prereq or concur: 460.01. Not open to students with credit for 460. BER/LAC course.

**460.03 Laboratory, Horticultural Insects U 2**

Examination of major arthropod pests of horticultural crops; emphasis on identification and control.

Wi Qtr. 2 2-hr labs. Prereq or concur: 460.01 or equiv with written permission of instructor. Not open to students with credit for 561. BER/LAC course.

**461+ Forest Entomology U 3**

Insects and other arthropods in the forest as they relate to effective management for maximum production of wood products and sustained preservation of forests and parklands. Horn.

Wi Qtr. 3 cl. Prereq: Biology 100 or 113 or H115, and Plnt Bio 102; Forestry 223 recommended.

**500 General Entomology U G 5**

Structure, function, development, ecology; and insect-human interactions in an evolutionary context; lab stresses classification and identification of insects; insect collection required. Hink and Johnston.

Su, Au Qtrs. 3 cl, 2 2-hr labs, field trip. Prereq: 15 cr hrs in biological sciences. For students at the jr or sr level in biological and agricultural sciences and grad students in biological sciences. BER/LAC/LAR course.

**531 Pesticides, the Environment, and Society U G 3**

The chemical, physical, and toxicological properties of pesticides are related to movement in the environment, and to their biological and ecological effects. Collins and Edwards.

Au Qtr. 3 cl. Prereq: 5 cr hrs in organic chem and 10 cr hrs in biological sciences at the 200 level or above.

**532 Pesticide Regulations U G 2**

Study and discussion of Ohio and U.S. pesticide regulations; rationale of the regulations will be correlated with the biological and environmental effects of pesticides. Willson.

Wi Qtr. 2 cl. Prereq or concur: 531.

**592 Workshop U G 1-6**

Intensive study of a topic in entomology; the format will depend upon the topic.

Su, Au, Wi, Sp Qtrs. Arr, lecs, labs, or lecs/labs. Prereq: Written permission of workshop director. Repeatable to a maximum of 6 cr hrs.

**611 Field Entomology U G 5**

Emphasis on collection, identification, and field methods; field trips are made to various islands of Lake Erie and the mainland. Horn and Nault.

Su Qtr (2nd term), given at Franz Theodore Stone Laboratory. 3 all-day cl.

**612 Aquatic Entomology U G 5**

Designed for preparation in the teaching of biology or for research on aquatic resources; emphasis on taxonomy and ecology of immature and adult aquatic insects.

Su Qtr, given only at Franz Theodore Stone Laboratory, 3 all-day cl. Prereq: 500 or 611 or equiv.

**621+ Insect Systematics and Diversity U G 5**

Principles of systematics and application to insect classification and identification. Johnson.

Sp Qtr. 2 cl, 6 lab hrs. Prereq: 500 or equiv.

**623+ Insect Morphology U G 5**

Comparative external and internal anatomy of insects and other arthropods; organ systems in developmental, functional, and evolutionary contexts; individual histological projects. Johnston.

Wi Qtr. 2 cl, 3 2-hr labs. Prereq: 500 or equiv.

**631 Insect Physiology U G 5**

The general physiology of insects and other arthropods; labs stress the use of insects to demonstrate fundamental physiological processes. Denlinger.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: 500, and Chem 251 and 254; or equivalents.

**641+ Insect Ecology U G 5**

The distribution, abundance, population regulation, plant-insect interactions, and species survival patterns of insects are analyzed in relation to microenvironment and ecosystems. Edwards.

Au Qtr. 3 2-hr lec/labs. Prereq: 500, and Plnt Bio/Zoology 313 or 313.01; or equivalents.

**642+ Insect Behavior G 4**

Introduction to mechanisms of insect behavior, behavioral physiology and ecology, and social behavior. Foster and Phelan.

Wi Qtr. 2 2-hr cl. Prereq: 500 or permission of instructor.

**645+ Simulation Modeling in Applied Insect Ecology U G 5**

Theory and practice of systems analysis relative to management of insect pests. Hoy.

Wi Qtr. 3 cl, 2 lab hrs. Prereq: 460.01 and Math 132, or their equivalents and permission of instructor.

**650+ Biological Control of Arthropod Pests U G 4**

Introduction to the theory and practice of biological control of arthropod pests.

Wi Qtr. 3 cl, 2 lab hrs. Prereq: 20 cr hrs in life sciences, including at least one entomol course.

**660 Advanced Economic Entomology U G 5**

Theory and practice of pest population management, emphasizing current research, population modelling, sampling, and data analysis. Horn.

Sp Qtr. 3 cl, 2 2-hr labs, field trips. Prereq: 460.02, and Plnt Bio/Zoology 313 or 313.01; or equivalents with written permission of instructor.

**661+ Medical Entomology U G 5**

Arthropod agents and vectors of vertebrate disease: life cycles, behavior, pathogenesis, identification, control; arthropod-pathogen and arthropod-vertebrate relationships; arthropod-borne disease systems. Foster.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 500 and Zoology 610 recommended.

**662+ Principles of Insect Toxicology U G 5**

The properties of insecticides, modes of action, metabolism, toxicity factors, joint action, resistance, experimental procedures and interpretation of data: Fisher.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 631 or equiv or permission of instructor.

**664+ Host Plant Resistance to Insects U G 3**

Introduction to the theory and application of host plant resistance as a means of insect control and its integration with other insect control strategies. Hammond.

Sp Qtr. 2 1½-hr cl. Prereq: 5 cr hrs in entomol or plnt path; or permission of instructor; 5 cr hrs of plnt bio recommended. Not open to students with credit for this topic under 694.

**670 General Acarology U G 4**

An introduction to the morphology, development, and general biology of mites; laboratory consists of a taxonomic review of the families of Acari. Johnston, Needham, and Wrensch.

Su, Sp Qtrs. 1 cl, 1 4-hr lab.

**693 Individual Studies U 1-5 G 1-10**

Individual work in the field of the chosen problems.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs for undergrads and to a maximum of 30 cr hrs for grads. No more than 5 cr hrs may be counted toward an undergrad entomol major. This course is graded S/U.

**694 Group Studies U G 2-5**

Group work in the field of the chosen problems.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs for undergrads and to a maximum of 20 cr hrs for grads.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****762+ Environmental Toxicology and Chemistry U G 5**

Technical examination of the environmental behavior of organic, inorganic, and microbial xenobiotics; emphasis on chemistry of interactions with physical environment, fugacity models, risk assessment, and predictive toxicology. Fisher.

Sp Qtr. 3 cl, 2 labs. Prereq: Chem 251 and 252.

**H783 Honors Research U 3-5**

A program of reading and research for each student with individual conferences, reports, and Honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degrees BA or BS *with distinction* in entomol. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**795 Special Topics in Entomology U G 1-3**

Seminar on publications, current research, or research techniques in the following topics:

- A— Acarology
- B— Apiculture
- C— Behavior
- D— Biological Control
- E— Ecology
- F— Economic Entomology
- G— Genetics
- H— Medical Entomology
- I— Pathology
- J— Physiology-Toxicology
- K— Research methods (data analysis)
- L— Systematics (evolution)

Su, Au, Wi, Sp Qtrs. 1, 2, or 3 cl. Prereq: 25 cr hrs in biological sciences at 200 level or above. Repeatable to a maximum of 10 cr hrs.

**800 Entomology Seminar G 1**

Faculty, graduate students, and outside speakers will participate; topics: recent advances in various entomological fields.

Au, Wi, Sp Qtrs. 1 1½-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**8311\* Advanced Insect Physiology G 5**

Insect biochemistry and recent advances in insect physiology; lab consists of a term project. Denlinger.

Sp Qtr. 2 cl, 2 3-hr labs. Prereq: 631 or Zoology 432, or equiv.

**8401\* Insect Chemical Ecology G 3**

Chemical strategies used by insects for defense, mate finding, and host selection; techniques used for the characterization of semiochemicals. Phelan.

Sp Qtr. 1 2-hr cl, 1 2-hr lab. Given at OARDC, Wooster, Ohio. Prereq: 642 and Chem 251 and 254; or equivs; or permission of instructor. Biochem 511 recommended.

**8411\* Advanced Biological Control of Arthropod Pests G 5**

Reports and discussions on the predators, parasitoids, and microbial pathogens affecting plants and invertebrates, particularly insects.

Wi Qtr. 3 cl, 2-hr lab. Prereq: 631; 641, 650, and 660 recommended.

**870 Medical-Veterinary Acarology G 4**

The mites associated with humans, domestic animals, and wildlife, stressing their ecology and behavior in relation to transmission of viral, rickettsial, bacterial, and protozoan diseases. Johnston and Needham.

Su Qtr. 1 cl, 1 4-hr lab; 3 hrs cl/lab daily for 3 wks.

**871 Agricultural Acarology G 4**

An intensive review of the mites associated with crops, ornamental plants, and stored food products with emphasis on taxonomy and ecology of these animals. Johnston.

Su Qtr. 1 cl, 1 4-hr lab, 8 hrs cl/lab daily for 3 wks.

**891 Interdepartmental Seminar in Environmental Biology G 2**

Selected topics treating the environmental aspects of organisms, populations, and ecosystems as they may relate to time, space, and human activities.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Given cooperatively by Entomology, Microbiology, Plant Biology, and Zoology. This course is graded S/U.

**999 Research in Entomology G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**Environmental Science**

202 Kottman Hall, 2021 Coffey Road, 292-9043

**694 Group Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**Interdepartmental Seminar in Environmental Biology**

See Entomol, Micrbiol, Plnt Bio, and Zoology 891.

**999 Research in Environmental Science G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**Family Medicine**

B0902B University Hospitals Clinic, 456 West 10th Avenue, 293-8007

**793 Individual Studies in Family Practice P 4, 8, 16, or 24**

Experience with family physician-preceptor or family practice residency programs; student must achieve objectives which fall within the curriculum objectives of the Dept of Family Medicine.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Med Coll 663 and written permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**Family Relations and Human Development**

315 Campbell Hall, 1787 Neil Avenue, 292-7705

**294 Group Studies U 2, 3 or 5**

Selected topics in family relations and human development.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**360 Family Development U 5**

Dynamics of family interaction over the life cycle; emphasis on developmental, social, and cultural influences on the family experience.

Au, Sp Qtrs. 5 cl, 1 hr arr. Prereq: Sociol 101 or Rurl Soc 105. BER/GEC/LAR course.

**361 Introduction to Child Development U 5**

Study of the nature, nurture, and development of children from conception through the beginning school years.

Au, Wi, Sp Qtrs. 3 cl, 2 hrs arr. BER/GEC/LAR course.

**363 Infant-Toddler Development U 5**

Examination of the behavior and development of children and issues of care throughout the periods of infancy and toddlerhood.

Au, Sp Qtrs. 2 2-hr cl, 2 hr arr. Prereq: 360, and 361 or 364.

**364 Life Span Human Development U 4**

Survey of human development across the life span directed toward an applied understanding of the individual and forces that shape development.

Au, Wi, Sp Qtrs. 2 1½-hr cl, 1 hr arr. BER/GEC/LAR course.

**365 Practicum in Infant-Toddler Child Care U 3**

Participation in infant-toddler laboratory as a student teacher.

Su, Au, Wi, Sp Qtrs. 4 hrs/wk practicum; 1 1½-hr seminar. Prereq: 363 and 364. Open to Family Relations and Human Development majors only.

**461 Guidance of Young Children in Groups U 3**

Application of principles of development to guidance of children in groups; modification of experiences for age level, ability, group, and individual needs.

Au, Wi Qtr. 3 cl. Prereq: 361 or 364 or Psych 550 or Ed-E&M C 460.

**464 Constructing a Curriculum Model for Young Children U 3**

In-depth examination of the Campbell Hall curriculum model from theory to practice.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 461; concur: 465.

**Environmental Engineering**

475 Hitchcock, 2070 Neil, 292-2005

See Civil Engineering.

**465 Day Care Practicum**

Participation in the day care center as a student teacher.

Su, Au, Wi, Sp Qtrs. Prereq: 361 or 364; and 461 or written permission of instructor. Pre-register one quarter in advance in dept office.

**465.01 Preschool/Day Care Practicum U 5**

Application of theory included in 461 and 464.

2 4-hr labs, 1 1/2-hr cl, Concur: 464. Open only to Fm&Hu Dv child development option students.

**465.02 Child and Family Studies Practicum U 3**

Application of theory included in 461.

1 1/2-hr cl, 4-hr lab. Open only to Fm&Hu Dv child and family studies option students.

**465.03 Group Care Practicum U 2**

4-hr lab, 1 cl. Open to all H Ec Ed majors; open to other Ohio State students with permission of instructor.

**466 Seminar: Human Service Organizations U 3**

Application of principles of family development to program planning; discussion of family needs and design of techniques to assess needs and ways to provide services.

Au Qtr. 2 cl, 1 hr arr. Prereq: 360. Open only to dept majors in child and family studies option.

**468 Individual and Family Helping Skills U 3**

The study of various strategies and techniques used in working with individuals and families in the context of family service organizations.

Au, Wi Qtrs. 1 3-hr cl. Prereq: 360 or 364.

**560 Advanced Family Development U 3**

Explores family development and family relations across the lifespan, primarily from a family systems perspective.

Sp Qtr. 2 1/2-hr cl. Prereq: 360 and jr/sr standing.

**565 Supervised Preschool/Day Care Teaching U 10, 12, or 15**

Guided participation of students in the responsibilities and activities of preschool and day care teachers.

Au, Wi, Sp Qtrs. Full-time teacher's schedule. Prereq: 464, 465.01, 4th yr standing in child development option, 2.50 CPHR, and written permission of instructor. Dept application must be filed 2 qtrs in advance.

**570\* Adolescent Development: A Biopsychosocial Perspective U 3**

Comprehensive overview of the biological, psychological, and social development of the adolescent.

Wi Qtr. 2 1/2-hr cl. Prereq: 360, 361, 364 or Psych 550, and jr/sr standing.

**589 Field Work**

Planned professional experience with children, youth, or adults in a program or community agency.

Au, Wi, Sp Qtrs. Prereq: 466, 4th yr standing, 2.50 CPHR, and written permission of instructor. Dept application must be filed 2 qtrs in advance. Repeatable to a maximum of 10 cr hrs. Students must enroll in 2 consecutive qtrs of field work. Open only to dept majors in child and family studies option.

**589.01 Introduction to Field Work U 5**

First quarter planned participation in community agency learning roles and responsibilities.

Au, Wi Qtrs. 12 hrs/week at human service agency, 1 hr cl.

**589.02 Advanced Field Work U 5**

Second quarter planned participation in community agency with increased responsibility for program development and evaluation.

Wi, Sp Qtrs. 12 hrs/week at human service agency, 1 hr cl. Prereq: 589.01.

**590 Practicum in Family Relations and Human Development Research U 1-5**

Provides students with opportunity to work individually with faculty member on research project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing; Ed-S&R 541 and Psych 220 or equiv, and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**593 Individual Studies U 1-5**

Problems in various phases of family relations and human development chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. H593 (honors) may be available to students enrolled in college honors program or eligible for enrollment. Prereq: Written permission of instructor and completion of individual study plan form. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**595 Professional Development U 2**

The professional: performance, role in society, position securement, involvement in organizations, and continuing development.

Wi Qtr. 1 1/2-hr cl. Prereq: 4th year standing in fm&hudv and completion of a minimum of 20 cr hrs in major in dept.

**663 Infant Development U G 3**

Infant development during first two years of life with special consideration of bases of support for provision of effective care.

Wi Qtr. 1 2-hr cl, 1 2-hr lab arr. Prereq: 363, Psych 550, and Sociol 434.

**665 Parenting U G 3**

Identification and examination of the theoretical approaches applicable to child rearing in families; emphasis on developing practical skills for working with parents and children.

Su, Au Qtrs. 2 1/2-hr cl. Prereq: 360 or Sociol 430; 361, 364, or Psych 550, or equiv with written permission of instructor; or graduate status.

**666 Children and Their Families Under Stress U G 3**

Examination of normative and developmental stressors and crises that impact on the development of children; implications for practitioners drawn from conceptual frameworks and recent research.

Au Qtr. 2 1/2-hr. cl. Prereq: 360, 364, and jr or higher standing.

**667 Administration of Agencies Serving Children and Families U G 3**

Study of the administration of day care centers and other family serviced agencies; topics include program objectives, regulations, program development and evaluation, staff development and training, and budget and funding.

Au Qtr. 1 1/2-hr cl, 1 hr arr. Prereq: 465.01 or 465.02 or equiv and written permission of instructor.

**669 Comparing Program Philosophies for Young Children U G 3**

Exploration of a variety of philosophies and resultant practices in caring for and educating young children in day care and pre school situations.

Wi Qtr. 2 1/2-hr cl. Prereq: 464, and 465.01 or 465.02, or permission of instructor, and sr or higher standing.

**670\* Family and Informal Support Systems of the Aged U G 3**

Consideration of issues, perspectives, and problems pertinent to support systems of aged persons, including adult children, siblings, other kin, friends, and others in the community.

Sp, Su Qtrs. 1 2 1/2-hr cl. Prereq: 15 hrs in behavioral or social sciences, or permission of instructor.

**689 Practicum in Family Relations and Human Development U G 3-5**

An opportunity for putting professional research and theory into practice by teaching, administrative, and agency experiences under supervision in university or agency settings.

Prereq: 3rd or 4th yr standing, 2.25 CPHR, and written permission of instructor. Application must be approved by instructor the quarter preceding registration.

**689.01 Advanced Child Development Practicum**

Special advanced supervised teaching experience with children ages three to five; emphasis on analysis of relationships among teacher behaviors, child characteristics, environmental factors, and learning outcomes.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 465.01, 465.02, 465.03, or permission of instructor. Repeatable to a maximum of 8 cr hrs.

**689.02 Curriculum Planning and Interdisciplinary Strategies for Serving Moderately, Severely, and Profoundly Delayed Young Children**

Practicum experience for students who are interested in working with young developmentally delayed children and their families in an educational setting.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 361 or equiv, and Psych 571 or Ed-S&R 651. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**689.03 Advanced Family Services Practicum**

Special field experience in family service agencies for students with unique interests, such as hospitalized children or the elderly.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 360 and 466. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 2, 3, or 5**

Selected topics in family relations and human development.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**695 Seminar in Child and Family Studies U G 3**

Review, interpretation, and evaluation of current literature and research in defined areas.

Su, Au, Wi, Sp Qtrs. 1 2 1/2-hr cl. Prereq: 360, 361, and sr or grad standing. Repeatable to a maximum of 6 cr hrs.

**695.01 Special Topics in Child Development**

Special topics seminar with a content focus on child development.

**695.02 Special Topics in Family Development**

Special topics seminar with a content focus on family development.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****701 Issues and Problems in Family and Human Development U G 1**

Issues and problems in research, teaching, and professional development in fields of family relations and human development.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Jr, sr, or grad standing in fm&hu dv or permission of instructor.

**701.02 Program Development**

Current issues and trends and methods in the interdisciplinary curricula and instructional resources in the field of family relations and human development.

**701.03 Research**

Current research trends and methods in the interdisciplinary field of family relations and human development.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Educational Services & Research, Human Nutrition and Food Management, Nursing, Physical Education, Psychology, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models. Wi Qtr. 1 3-hr cl. Not open to students with credit in 702.01 in any cross-listed areas.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su Qtr. 1 2-hr cl. Not open to students with credit in 702.02 in any cross-listed areas.

**760 Family Relations and Human Development Research Process Analysis U G 3**

Historical overview of research methods and related conceptual issues relevant to study of family relations and human development; creative approaches to research problems.

Au Qtr. 1 1½-hr cl. Prereq: 361 or 363, Psych 550, and Sociol 434 or equiv with written permission of instructor.

**764 Advanced Family Development U G 5**

Theory, research, and methods used to study family development; individual and family developmental task over the life span; personal and social context of family development.

Au Qtr. 2 2-hr cl. Prereq: 360 and 364, or equivs with written permission of instructor.

**765 Advanced Child Development G 4**

Growth and development of children through adolescence with emphasis on maturation patterns and individual differences.

Wi Qtr. 2½-hr cl, 2 hrs arr. Prereq: 360, and 361 or Psych 550, or equiv with written permission of instructor.

**770 Professional Issues in Marital and Family Therapy G 4**

A preclinical introduction to the central issues and resources in professional development, including personal growth, legal responsibilities, regulation, ethics, and special areas of practice.

Au Qtr. 3½-hr. cl.

**793 Individual Studies U G 1-5**

Problems in various phases of family relations and human development.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**797 Interdepartmental Seminar U G 2-4**

Two or more departments may collaborate in presenting seminars in subjects of mutual interests; topics to be announced.

Repeatable to a maximum of 6 cr hrs with permission.

**810 Divorce and Remarriage G 3**

Analysis of research and theory pertaining to the process of marital dissolution, adjustment, and remarriage.

Wi Qtr. 1 3-hr cl. Prereq: 764 and 765 or equiv and permission of instructor, 6 cr hrs in research methods, design, or statistics.

**820 Family Theory G 3**

Explores major theoretical perspectives of the field of family science as well as strategies for developing theory.

Wi, Sp Qtrs. 1 2½-hr cl. Prereq: 764.

**840 Seminars in Adolescence G 3**

A series of seminars focusing on human development during adolescence, processes involved in development during this period, the social and family contexts of development.

Prereq: 760, 764, 765; or permission of instructor. Repeatable to a maximum of 9 cr hrs. One of series will be offered each year.

**840.01 Adolescents and Their Families**

A multidisciplinary analysis of theory and research bearing on the topic of changing parent-child relationships during the period when children are adolescents.

Au Qtr.

**840.02 Adolescence: The Differentiation Process and the Social Context**

Comprehensive overview of the differentiation construct's utilization in family theory, research, and clinical practice.

Sp Qtr. 1 2½-hr cl.

**840.03 Adolescence: The Individuation Process in the Context of the Family**

A review and analysis of research on the process of individuation during the developmental period of adolescence in the context of the family.

Wi Qtr. 1 3-hr cl.

**850 Measurement and Assessment in the Study of Children and Families G 3**

Examination of measurement techniques, instruments, and methods which are used by family researchers to assess children and families.

Au Qtr. 1 2½-hr cl. Prereq: 760 and one other research course or permission of instructor.

**851 Practicum in Research G 1-5**

Participation in the research process under the supervision of a faculty member.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 20 cr hrs. A maximum of 5 hrs of 851 may be included in student's program of study. This course is graded S/U.

**852 Practicum in Teaching G 1-5**

Supervised college teaching experience for department graduate students.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**861\* The Family: Middle and Later Years G 3**

The interrelationship and adjustment of families with emphasis on the middle and later years of the life cycle. O'Bryant.

Su, Sp Qtrs. 1 2½-hr cl. Prereq: 764 or equiv with written permission of instructor, and 6 cr hrs in research methods, design, or stat.

**862 Seminar in Family Relations and Human Development G 3 or 5**

Topics to be announced.

Su, Au, Wi, Sp Qtrs. 1 2½-hr cl. Prereq: Grad standing in human ec or written permission of instructor; and 6 cr hrs in research methods, design or stats. Repeatable to a maximum of 24 cr hrs.

**863 Infant Caregiving Contexts G 3**

Review and critical analysis of recent theoretical and research literature relevant to the design and evaluation of infant care settings.

Sp Qtr. 1 2½-hr cl. Prereq: 663 or equiv with permission of instructor, and 6 cr hrs in research methods, design, or stat.

**864 Contemporary Issues in Group Experiences for Young Children G 3**

Identification and examination of current practices in group experiences for children under five; emphasis on current issues, relevant research and theory as related to curriculum design.

Sp Qtr. 1 2½-hr cl. Prereq: 15 cr hrs of child development and/or child psychology, supervised student teaching or experience in nursery schools or day care centers, and 3 cr hrs in research methods, design, or stat.



## 154 Family Relations and Human Development

### 865 Play and Development G 3

Examination of research on play, including development, special populations, and ways of encouraging and studying play.

Au Qtr. 1 2½-hr cl. Prereq: 765 or equiv grad course in human development or play, or permission of instructor.

### 866 Practicum in Supervision of Preschool/Day Care Student Teachers G 3

Guided supervision of undergrad student teachers in preschool/day care settings.

Sp Qtr. Arr. Prereq: Grad standing in human ec specializing in fm&hu dv; training and experience as a preschool/day care teacher; H Ec Edu 745 or Ed-E&M C 768 or Ed-F & R 861 or Ed-P&L 861 or Ed-T&P 861; permission of instructor.

### 867 Current Trends and Issues in Family Relations and Human Development G 3

An analysis and assessment of the empirical and theoretical literature on selected family science topics.

1 2½-hr cl. Prereq: 764 and 765 or equiv; 6 cr hrs in research methods, design or stats, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

#### 867.02\* Men in Families

A developmental analysis and assessment of the empirical and theoretical literature on male role performance in family systems with implications derived for research and social policy.

Sp Qtr.

#### 867.03\* Women in Families

An analysis and assessment of the theoretical and empirical literature on women's roles in family systems.

Sp, Su Qtrs.

### 870 Family Systems Assessment G 4

A survey of issues and techniques used in assessment of families for purposes of research and practice, including issues and design for family therapy research.

Wi Qtr. 3 cl. Prereq: 760 and 770.

### 874 Family Therapy Theory I G 4

An emphasis on the theoretical orientation of the structural, strategic, MRI, and Milan approaches to family therapy.

Wi Qtr. 1 3½-hr cl. Prereq: 873 or permission of instructor.

### 875 Family Therapy Theory II G 4

An emphasis on the theoretical orientation of the intergenerational, behavioral, experimental and solution-focused approaches to family therapy.

Sp Qtr. 1 3½-hr cl. Prereq: 873 or permission of instructor.

### 876 Marital Therapy Techniques G 4

An emphasis on theoretical approaches, intervention techniques, and basic issues or problems of application for marital therapy.

Sp Qtr. 3 cl. Prereq: 874 or 875.

### 878\* Supervision of Marriage and Family Therapy G 4

Preparation of Marriage and Family Therapy doctoral students to provide supervision of therapy.

Wi Qtr. 1 2-hr cl; 4 hrs. practicum. Prereq: 889 and enrollment in Marriage and Family Therapy Program, or permission of instructor.

### 880 Seminar in Marital and Family Therapy G 3

Topics to be announced.

Su Qtr. 2½-hr cl. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 889 Practicum in Marital and Family Therapy G 1-3

Supervised practice in marital and family assessment and intervention in the department's marital and family therapy clinic.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

### 894 Group Studies G 2, 3, or 5

Selected topics in family relations and human development.

Prereq: 6 cr hrs in research methods, design or stat; and stated prereqs for specific topics. Repeatable to a maximum of 10 cr hrs.

### 989 Supervised Field Experience in Family Therapy G 1-3

Supervised practice in marital and family assessment and intervention in an agency setting.

1-5 client contact hrs per week. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

### 993 Individual Studies G 1-5

Problems in various phases of family relations and human development.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 998 Research: Thesis G Arr

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

### 999 Research: Dissertation G Arr

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Family Resource Management

174 Campbell Hall, 1787 Neil Avenue, 292-4389

### 260 Family Financial Management U 5

The management of family financial resources; topics include financial planning and budgeting, insurance, credit, and savings and investments.

Su, Au, Wi, Sp Qtrs. 5 cl. This course is available for EM credit. A grade of 2.7 in 260 is a prereq: for 560. SS Admis Cond course.

### 294 Group Studies U 2-5

Selected topics in family resource management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

### 330 Introduction to Home Equipment U 5

Principles involved in the selection, construction, operation, and care of home equipment and their relation to the well-being of the family.

Wi Qtr. 2 1½-hr cl, 2-hr lab.

### 340 American Households: Indicators of Economic Status U 5

Living arrangements and characteristics of American population, distribution of income, and government policy as determinants of the economic status of households.

Au, Wi, Sp Qtrs. 3 1½-hr cl. Prereq: Stat 133 or 135 or 145; or Ag Econ 205; or permission of instructor. Not open to students with credit for 662. BER/ GEC/LAR course.

### 341 Family Resource Management

Management process of utilizing specific resources for families' well-being with consideration of the interdependence and interrelationships with the environment and associated organizational systems.

Wi, Sp Qtrs.

#### 341.01 Family Resource Management Theory U 3

2 1¼-hr cl. Prereq: 3rd yr standing. This course is available for EM credit.

#### 341.02 Family Resource Management Application U 2

Application and integration of management principles in varying household situations.

2 2-hr cl. Prereq: 3rd yr standing and concur: 341.01.

### 351 Residential Interiors: Principles U 5

Application of art principles to furnishing a home with consideration of aesthetic, economic, and social factors affecting choice.

Au Qtr. 3 cl, 2-hr. lab.

### 362 Resource Management Issues for Women U 3

Issues and choices faced by women in their employment and resource management, as well as policies affecting women in these roles.

Au Qtr. 2 1¼-hr cl. Prereq: Agr Econ 200 or Econ 100 or 200.

### 372 Consumer Policy: Evolution and Effectiveness U 4

An analysis of consumer problems and efforts to ameliorate problems through regulation.

Au, Sp Qtrs. 4 cl. Prereq: Econ 100 or 200 or Ag Econ 200 or H200.

### 425 Housing: Physical Environment

The physical aspects of both housing and the housing environment with concern for their relationships to individual and family satisfactions with housing choices.

Wi Qtr.

#### 425.01 Housing: Physical Environment Issues U 3

Physical aspects of both housing and housing environment with concern for their relationships to individual and family satisfaction with housing choices.

3 cl. Not open to students with credit for 425.

#### 425.02 Housing: Physical Environment Design Application U 1

Application of the physical aspects of housing to the needs of families and individuals. Students will produce plans for house and kitchen designs.

1 2-hr cl. Concur: 425.01.

### 451\* Residential Interiors: Problems in Conceptual Visualization U 5

Exploration toward the solution of interior, environmental, and spatial problems based on space analysis and planning; emphasis on the functional spatial relationships of residential interior space to furnishings.

Sp Qtr. 3 cl, 1 2-hr lab; 2 hrs arr. Prereq: 351, En Graph 121, or permission of instructor.

**560 Family Financial Management II U G 4**

Analyze and evaluate financial decisions by families at various points in family life cycle and apply economic principles to development of aids used by families facing financial decisions.

Au, Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: a grade of 2.7 or better in 260.

**589 Field Work U 3-5**

Observation and application of concepts and principles learned in family resource management course work to a professional setting.

Sp Qtr. 1 cl, arr. Department application must be filed two quarters in advance. This course is graded S/U.

**589.01 Field Experience—Consumer Affairs**

Prereq: 110 earned cr hrs, 2.00 CPHR, 340, 341.01, 341.02, 372, 595, and written permission of instructor.

**589.02 Field Experience—Financial Management**

Prereq: 110 earned cr hrs, 2.00 CPHR, 340, 372, 560, 595, Acct&MIS 211, 212, and written permission of instructor.

**589.03 Field Experience—Furnishings/Equipment**

Prereq: 110 earned cr hrs, 2.00 CPHR, 330, 340, 351, 372, 425, 595, and 631 or 632, or 451 or 651 and written permission of instructor.

**593 Individual Studies U 2-5**

Problems in various phases of family resource management.

Su, Au, Wi, Sp Qtrs. 1 or more conf. H593 (honors) may be available to students enrolled in college honors program or eligible for enrollment. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**595 Professional Development U 2**

The professional: performance, role in society, position securement, involvement in organizations, and continuing development.

Au, Wi Qtrs. 1 1 1/2-hr cl. Prereq: 372 and 3rd yr standing. This course is graded S/U.

**611 Consumer Housing Problems U G 5**

Production and allocation of housing and problems faced by consumers in obtaining housing.

Sp Qtr. 3 1 1/2-hr cl. Prereq: 340 and Econ 200.

**625 Work in the Home U G 3**

Study of time allocation throughout the life cycle, especially as it relates to work in the home.

Sp Qtr. 2 2 1/2-hr cl. Prereq: 340, 341.01, and Stat 133 or 135 or 145 or Ag Econ 205.

**631 Food Related Home Equipment U G 5**

Experimental research design, computerized data acquisition, analysis, and reporting of results of food preparation and refrigeration techniques.

Wi Qtr. 3 cl, 2 2-hr lab. Prereq: 330 and Stat 145 or equiv.

**632 Home Cleaning: Principles and Equipment U G 5**

Experimental research design, computerized data acquisition, analysis, and reporting results of studies of resource use and performance of home cleaning systems.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 330 and Stat 145.

**651† Residential Interiors: History of Design and Decoration U G 4**

Analysis of furniture styles from antiquity through the present with emphasis on aesthetic, economic, and social implications as well as influencing philosophies.

Sp Qtr. 4 cl. Prereq: 351 or permission of instructor. Not open to students with credit for 551.

**671 Consumer Choice in an Ecological Context U G 5**

Consumption choice as affected by a set of societal factors and the interrelationships between consumption patterns and the natural environment.

Wi, Sp Qtrs. 2 2 1/2-hr cl. Prereq: 372, Econ 200, and Psych 100 or Sociol 101.

**672 Consumers and the Market U G 4**

Economic analysis of consumer market institutions; government policies and laws in terms of the welfare of consumers.

Wi Qtr. 2 2-hr cl. Prereq: 372, and Econ 200 or Agr Econ 200.

**694 Group Studies U G 2-5**

Selected topics in family resource management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****711\* Housing Issues G 3**

Study of interrelationship between housing product and process and social and economic environments.

Sp Qtr. 2 1 1/2-hr cl.

**739 Household Economic Status: Measurement and Analysis G 5**

Measurement and analysis of household economic status including key concepts, determinants, policy implications, and implications for research.

Wi Qtr. 3 1 1/4-hr cl. Prereq: Grad standing.

**740 Theories and Models of Family Resource Management G 4**

Aspects of family life are analyzed from the perspective of family resource management theories; emphasis is placed on empirical implications of the theories.

Sp Qtr. 2 1 1/2-hr cl. Prereq: 739, and Econ 501 or 705 or equiv.

**741 Managerial Concepts and Their Measurement G 4**

Tools and techniques which are applicable to resource allocation decisions in a specific household.

Au Qtr. 2 1 1/4-hr cl, 1 2-hr lab. Prereq: 739 and 740.

**782 Classroom Application of Family Resource Management Subject Matter in Higher Education G 3**

Analysis of educational research and theory applied to teaching Family Resource Management subject matter in higher education.

Sp Qtr. 2 1-hr cl, 1-hr arr.

**791 Research Practicum in Family Resource Management G 2-5**

Supervised participation in research; involvement may include data collection and analysis or manuscript preparation; credit will be determined by involvement and level of responsibility.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing, a statistics course, and permission of instructor. Repeatable to a maximum of 20 cr hrs. Supplements individual studies (FM RES M 793) and facilitates students' ability to participate in research.

**792 Teaching Practicum in Family Resource Management G 2-5**

Supervised participation in college teaching; Nature and degree of involvement are based on student's preparation; credit will be determined by involvement and level of responsibility.

Su, Au, Wi, Sp Qtrs. Prereq: 782, Grad standing, and permission of instructor. Repeatable to a maximum of 20 cr hrs. Supplements individual studies (FM RES M 793) to facilitate students' ability to document their teaching experience.

**793 Individual Studies U G 2-5**

Problems in various phases of family resource management chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**841\* Family Resource Management: Development and Theory G 3**

Historical development and present trends in family resource management with emphasis on theory and practices.

Sp Qtr. 2 1 1/2-hr cl. Prereq: 739, 740, 741, or written permission of instructor.

**862\* Household Economic Status: Theory and Research G 5**

Interpretation of theory and research related to household economic status.

3 1 1/2-hr cl. Prereq: 739, Econ 705 and 706 or equiv, and Stat 529 or equiv.

**872\* The Consumer in American Society G 3**

Analysis of the elements involved in the consumer interest, interrelationships of the elements, cost effectiveness of these methods, and distributional impacts of the alternatives.

2 1 1/2-hr cl. Prereq: Econ 705 and 706 or equivs; and 3 cr hrs of stat.

**894 Group Studies G 2-5**

Selected topics in family resource management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**895 Seminar in Family Resource Management G 3-5**

3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs including cr hrs in 822.

**895.01 Consumer Economics****895.02 Family Finance****895.05 Household Technology****895.06 Housing****993 Individual Studies G 1-5**

Problems in various phases of family resource management chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research: Thesis G Arr**

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research: Dissertation G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Food Science and Technology

122 Vivian Hall, 2121 Fyffe Road, 292-6281. Fax: 292-0218

**170 Wine in Western Culture U 4**

The role of wine in western culture with emphasis on the geographic origins, production, and specific uses of wine types. Roehrig

Au Qtr. 4 cl. Not open to students with credit for Hort 170.

**201 The Science of Food U 5**

Food and nutrition in modern civilization; principles involved in assembling, processing, and distribution of food; and the role of science, industry, and government in meeting food needs.

Au, Sp Qtrs. 5 cl. Prereq: Biology 101 or 113 or equiv. Not open to students with credit for Fd Sc&Nu 100 or Food Tec 241. BER/GEC/LAR course.

**289 Food Industries Field Experience U 3**

Ten weeks practical experience or equivalent in an approved food plant or laboratory; written report required.

Su, Au, Wi, Sp Qtrs. Open only to students majoring in food science.

**Introduction to Food Process Engineering**

See Agr Eng. Offered in cooperation with Agricultural Engineering.

**401 Introduction to Food Processing U 3**

Unit operations in food processing, basic elements of food processing equipment, product formulation, food manufacturing, quality control, cleaning, and sanitizing. Harper.

Au Qtr. 1 cl, 2 3-hr labs. Not open to students with credit for 537.

**Marketing Dairy Products**

See Agr Econ 426. Offered in cooperation with Agricultural Economics.

**493 Individual Studies U 1-5**

Individual study course to permit undergraduate students to explore in-depth selected areas of food science and nutrition.

Su, Au, Wi, Sp Qtrs. 3-, 6-, 9-, 12-, or 15-hr lab. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**494 Group Studies U 3-5**

Group studies on selected topics in food science and nutrition.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. H494 (honors) may be available to students enrolled in an honors program or by written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**541 Physical Properties of Foods U G 4**

Elements of identification and measurement of physical properties of foods and application to food systems. Harper.

Au Qtr. 3 cl, 2-hr lab, 1-hr workshop. Not open to students with credit for 537.

**589 Professional Experience U 5**

Ten weeks of supervised structured in-depth industrial experience in selected food related subjects.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 20 cr hrs of 500-level courses or above in major field, and permission of instructor. Open only to students majoring in food science and nutrition. Repeatable to a maximum of 10 cr hrs. Experience must be obtained with organization approved by the dept.

**601 Food Analysis U G 5**

Basic composition, chemical structures and properties of foods; and chemical and instrumental analyses of food components. Min.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: Chem 252. Not open to students with credit for 521 or 522.

**605 Chemical Reactivity of Food Components U G 4**

Intensive coverage of the chemical reactions of food components with emphasis on the reaction mechanisms responsible for changes in food products. Mangino.

Sp Qtr. 3 cl, 1 2-hr ab. Prereq: 522 or 602, and Chem 252. Not open to students with credit for 641.

**610 Processing of Fluid Milk and Related Products U G 4**

Principles involved in the production, processing, and marketing of high quality, safe, and nutritious milk and milk products.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 401 and Micrbiol 509. Not open to students with credit for 631.

**611+ Cheese and Fermented Foods U G 4**

Principles and practices related to the manufacture, processing, distribution, and marketing, nutritional value and safety of fermented foods. Yousef.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 401, 522, or 602, and Micrbiol 509. Not open to students with credit for 634. Field trips may require extra time for students.

**612\* Frozen and Concentrated Foods U G 4**

Principles and practices of science and engineering of concentrated and frozen foods and their unit operations. Hansen.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 401 and 522 or 602. Not open to students with credit for 633.

**621 Food Additives U G 3**

Chemical and physical nature of food additives; functions and effects on chemical, rheological, microbiological, and nutritional properties of foods. Chism.

Au Qtr. 3 cl. Prereq: 15 cr hrs in food science or related area.

**622 Food Sanitation and Protection U G 5**

Principles of sanitation applicable in the production, processing, distribution, and handling of food; relationship to food quality and safety. Yousef.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: Micrbiol 509 or 601.

**630 Principles of Food Processing U G 4**

Principles of science and engineering applied in food processing and their unit operations including concentration, separation, and thermal sterilization processes.

Wi Qtr. 3 cl, 2-hr lab. Prereq: 541 or grad standing or permission of instructor.

**632 Sensory Properties and Evaluation of Foods U G 3**

Fundamentals of sensory perception, taste, and odor classification and threshold values; subjective and objective evaluation of foods; panel selection and interpretation of results; industrial applications. Ndife.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: Stat 125 or 145 or Agr Educ 387 or Agr Econ 205 or Agronomy 210 or Animl Sc 210. Not open to students with credit for 531.

**640 Food Regulations and Product Examination**

Food laws, regulations, and the technical control of processed foods; interpretation of laboratory analysis for control of product quality.

**640.01 Lecture U G 3**

Food laws, regulations, grade standards, and the technical control of processed foods, interpretation of laboratory analysis for control of product quality.

Wi Qtr. 3 cl. Prereq: 401. Not open to students with credit for Hort 640.

**640.02 Laboratory U G 1**

Wi Qtr. 1 2-hr lab. Prereq: 640.01 or concur.

**648 Essentials of Food Plant Operation U G 3**

An indepth presentation of the special factors affecting food plant organization, production, procurement, distribution, and the teraction required to develop plant operations. Bash.

Wi Qtr. 3 cl. Prereq: 401. Not open to students with credit for Hort 648.

**649\* Packaging Materials and Methodology U G 3**

A discussion of terminology and literature of commercial packaging, principal methods of packaging, and principles of selectng packaging materials. Bash.

Wi Qtr. 3 cl. Prereq: 640 or equiv. Not open to students with credit for Hort 649.

**H683 Honors Projects U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

**Advanced Food Process Engineering**

See Agri Eng 684. Offered in cooperation with Agricultural Engineering.

**692 Workshop in Milk and Food Sanitation U G 1-2**

Five day in-depth program on fundamentals of milk and food protection; designed for individuals interested in food processing, distribution; quality control, public health, and regulatory activities.

Sp Qtr. 15 or 30 hrs cl contact during the week between winter and spring qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 3 cr hrs.

**693 Individual Studies U G 3-5**

Individual project studies of current problems; planning, conducting, and reporting research.

Su, Au, Wi, Sp Qtrs. 9-, 12-, or 15-hr lab. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**696 Technical Problem Solving U G 5**

Analysis of technical problems in food science; fostering creative thinking to the approach and solution of problems; preparation and oral presentation of papers. Hansen.

Sp Qtr. 3 cl. 2 2-hr labs. Prereq: 541, 602, 4th yr standing, second writing qtrs. Prereq or concur: 622. Not open to students with credit for 695. GEC course.

**723 Food Structure and Interactions U G 5**

Microstructure and texture of foods; relationship to food components and interactions, and physical properties of foods; application of light and electron microscopy. Hansen.

Su Qtr. 3 cl, 2 3-hr labs. Prereq: 15 cr hrs in food science or related areas.

**733\* Nutrition in the Support of Growth U G 5**

A functional approach to the study of nutrition for support of growth and maintenance in animals and humans.

Wi Qtr. Prereq: Animl/Dairy/Pltly Sc 310, Biochem 511, and Animl/Dairy/Pltly Sc 430 or Humn Ntr 610, or permission of instructor. Not open to students with credit for Animl Sc 733 or Dairy Sc 733 or Pltly Sc 733. Cross-listed in Animal Science, Dairy Science, and Poultry Science.

**736 Advanced Food Microbiology G 3**

Microbiological aspects of food preservation, detection of microbiological contaminants, hazards, and microorganisms of public health significance. Richter.

Wi Qtr. 3 cl. Prereq: 622 or Micrbiol 636, and Chem 123. Not open to students with credit for 701 or Micrbiol 736. Cross-listed in Microbiology.

**761 Advanced Nutrient Utilization I U G 5**

In-depth treatment of digestion, absorption, transport, and utilization of dietary carbohydrates and fat for energy production and fat deposition in humans and other higher animals. Allred.

Wi Qtr. 5 cl. Prereq: Biochem 511 or equiv and Humn Ntr 310 or Animl, Dairy, Pltly Sc 430 or equiv.

**762 Advanced Nutrient Utilization II U G 5**

In-depth treatment of digestion, absorption, transport, and utilization of proteins, amino acids, and vitamins in humans and other higher animals; energy reactions and requirements. McCune.

Sp Qtr. 5 cl. Prereq: 761.

**799 Teaching Experience in Food Science and Nutrition G 1-6**

Teaching at the higher education level, instructional development under faculty guidance, experience in testing and evaluation of students, and analysis of teaching performance.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and prior or concurrent enrollment in teaching methods course or workshop. Repeatable to a maximum of 10 cr hrs. Provides teacher training and evaluation which is recognized on transcript.

**821+\* Food Lipids G 3**

Chemical, physical, and biological properties of food lipids. Min.

Au Qtr. 3 cl. Prereq: 634 or permission of instructor.

**822+\* Food Proteins G 3**

Sources of chemical, physical, and biological properties of food proteins; effect of food composition, handling, and processing of protein characteristics and functionalities. Mangino.

Wi Qtr. 3 cl. Prereq: one course in physical chemistry or permission of instructor.

**830 Advanced Studies in Nutrition G 3**

Au, Wi, Sp Qtrs. 3 or 4 cl. Prereq: 761, 762; Animl Sc 630 or 631 or Dairy Sc 630 or 631 or Humn Ntr 610; 10 grad cr hrs in physiology. Not open to students with credit for Animl Sc 830, Dairy Sc 830, Humn Ntr 830, or Pltly Sc 830. Cross-listed in Animal Science, Dairy Science, Human Nutrition and Food Management, and Poultry Science.

830.01\* Energy

830.02+\* Minerals

**830.03+\* Protein and Amino Acids**

830.04\* Vitamins

830.05+\* Lipids

830.08\* Carbohydrates

**833 Research Methods in Food Science G 5**

Principles and application of selected instrumental methods of analysis of food systems; visual, ultraviolet, and infrared spectroscopy; partition, absorption, gel permeation, gas liquid chromatography, electrophoresis, and radioisotopes. Morr.

Wi Qtr. 3 cl, 2 3-hr lab. Prereq: Permission of instructor.

**850 Seminar G 1**

Graduate student-staff participation in a study of teaching and research trends and opportunities; critical analysis of research approaches, findings, and publications.

Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 6 cr hrs.

850.01 Food Science

850.02 Nutrition

**861 Topics in Advanced Nutrition G 3**

Systematic treatment and evaluation of areas of publications of current interest in nutrition; topics will be announced quarterly. Allred and Roehrig.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 762. Repeatable to a maximum of 9 cr hrs.

**892 Interdepartmental Seminar in Plant Physiology G 1**

Students will present seminars on their research or related topics in plant physiology and/or attend seminars by local and visiting researchers.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Not open to students with 12 cr hrs in Agronomy 892, Biochem 892, Plnt Bio 892, or Hort 892. Repeatable to a maximum of 12 cr hrs, including cr hrs earned in Agronomy 892, Biochem 892, Plnt Bio 892, and Hort 892. Cross-listed in Agronomy, Biochemistry, Horticulture, and Plant Biology. This course is graded S/U.

**898 Interdepartmental Seminar in Nutrition G 1**

A seminar in nutrition and in related fields of food technology.

Sp Qtr. Given cooperatively by Animal Science, Dairy Science, and Food Science and Technology. This course is graded S/U.

**993 Individual Studies G 1-5**

Research experience and preparation of technical paper.

Su, Au, Wi, Sp Qtrs. Prereq: 15 cr hrs of grad level courses in food science or technology. For Plan B, MS degree students only. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**998 Research: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Forestry

School of Natural Resources

210 Kottman Hall, 2021 Coffey Road, 292-2265

**General Prerequisites for Courses Numbered 200**

*Unless otherwise indicated, the prerequisites for 200-level courses are 45 cr hrs in collegiate courses, exclusive of ROTC and phys ed; or specified course(s) numbered 100-199.*

**221 Conifer-Hardwood Dendrology U 5**

Study of principal forest tree species in the United States with emphasis on identification, range, habitat, reproductive characteristics, silvical characteristics, and importance.

Au Qtr. 3 cl, 2 2-hr labs.

**223 Silvics U 3**

Study of life history and characteristics of forest trees and stands, with emphasis on genetic, environmental, and physiological attributes determining ecosystem structure and function. Vimmerstedt.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq or concur: Biology 113 and 114.

**General Prerequisites for Courses Numbered 300 and 400**

*Unless otherwise indicated, the prerequisites for 300- and 400-level courses are 90 cr hrs in collegiate courses, exclusive of ROTC and phys ed; or specified course(s) numbered 100-399.*

**321 Silviculture U 3**

Ecological principles and practical applications of methods for regenerating and culturing forest stands to provide a variety of benefits. Hix.

Au Qtr. 3 cl. Prereq: Biology 113 and Nat Res 200, or equiv.

**323 Forest Biometry U 5**

A study of the quantitative decision tools necessary to measure the forest resource; confidence and probability measures of land area, timber, water, wildlife, and recreation.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: Nat Res 222.

**324 Forest Photointerpretation U 3**

Principles and methods of mapping, photointerpretation, aerial typing, and inventory. Measurement and classification of the forest using maps, photos, and remote sensing data.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: Stat 145 or equiv.

**432 Forest Industries II U 5**

A detailed study of the harvesting and manufacturing processes used to produce forest products; laws governing workshop safety and environmental pollution; transportation of forest products.

Wi Qtr. 5 cl. Romig.

**General Prerequisites for Courses Numbered 500**

*Unless otherwise indicated, the prerequisites for 500-level courses are 15 cr hrs in courses in the same discipline numbered 200 or higher, or 10 cr hrs in courses numbered 200 or higher in the same discipline, plus 10 cr hrs in courses numbered 200 or higher in specified allied disciplines; or baccalaureate degree.*

**525† Forest Economics and Management U G 5**

Application of micro-economic theory to management of woodlands and mills and development of timber management plans which integrate economic and biological considerations.

Wi Qtr. 3 2 hr cl. Prereq: 321 and 323 and one course in economics, or written permission of instructor.

**533 Forest Field Laboratory U 6**

An intensive field course stressing compilation, analysis, and interpretation of mensurational and ecological data in the preparation of alternative silvicultural prescriptions for forested areas. Kasile.

Au Qtr. Arr. Prereq: 321 and 323. Offered at Barnebey Center between Labor Day and first day of Autumn Quarter.

**593 Individual Studies U G 2-5**

Special problems in the field of forestry and forest products.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

## French

248 Cunz Hall, 1841 Millikin Road, 292-4938

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 (including the decimal subdivisions such as 101.51, etc.) and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.

**101 Elementary French I**

Introduction to French; development of listening, reading, speaking, and writing skills.

Su, Au, Wi, Sp Qtrs. Not open to students with credit for 100.02 or to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of study in this language in high school, except by permission of dept. GEC/LAR courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**101.51 Individualized Track U 1-5**

Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hours before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**102 Elementary French II**

Continuation of 101, further development of listening, reading, speaking, and writing skills.

Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Prereq: 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 101.01 or 5 cr hrs in 101.51, or permission of instructor. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students who complete 5 hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

**102.66 Intensive French for Review I U 5**

Review of basic structures, vocabulary, and skills needed for entry into 103.

Prereq: 2 or more years of high school French and placement in 101 by placement exam. Not open to native speakers of French through regular course enrollment or EM credit or to students with credit for 101.01, 101.51, 102.01, or 102.51.

**103 Intermediate French I**

Continued study of French; development of listening, reading, speaking, and writing skills; readings based on contemporary French culture and literature.

Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

**103.01 Classroom Track U 5**

Prereq: 102.01, or 102.66, or 5 cr hrs of 102.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**103.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 102.01, or 102.66, or 5 cr hrs of 102.51 or permission of instructor. Students may register for 102.51 and 103.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**103.66 Intensive French for Review II U 5**

Intensive review of basic structures, vocabulary, and skills needed for entry into 104.

3 1½-hr cl. Prereq: 3 or more years of high school French and placement in 102 by placement exam. Not open to native speakers of French through regular course enrollment or EM credit or to students with credit for 102.01, 102.51, 102.66, 103.01, or 103.51.

**104 Intermediate French II**

Prereq: 103.01 or 103.66 or 5 cr hrs of 103.51 or 112. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Only one of the decimal subdivisions may be taken for credit. GEC/LAR courses.

**104.01 Conversation and Composition U 5**

Continued development of listening, speaking, reading, and writing with an emphasis on oral and written skills; focus on functional topics and thematic vocabulary.

Su, Au, Wi, Sp Qtrs. 3 1½-hr cl. Students not planning to continue in French may substitute any one of the following decimal subdivisions for 104.01. Course conducted in French. This course is available for EM credit.

**104.02 Conversation U 5**

Emphasis on speaking and aural comprehension with special attention to practical situations.

Au, Wi, Sp Qtrs. Course conducted in French.

**104.03 Contemporary French Society U 5**

Emphasis on various aspects of contemporary French cultures; readings and discussion in French.

Au, Wi, Sp Qtrs.

**104.04 Civilization U 5**

Aspects of French civilization: geography, history, social developments, and the arts; readings and discussion in French.

Au, Wi, Sp Qtrs.

**104.06† Readings in the Physical, Social, and Behavioral Sciences U 5**

Development of reading skills through intensive reading of materials from the physical, biological, social, and behavioral sciences; readings in French.

Sp Qtr.

**104.51 Conversion and Composition U 1-5**

Continued development of listening, speaking, reading, and writing with an emphasis on oral and written skills; focus on functional topics and thematic vocabulary.

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 103.01, 103.66, or 5 cr hrs in 103.51, or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Proficiency at the level of 80% is required for advancement from 1 cr hr to the next.

**112 Intensive French U 5, 10, or 15**

Elementary and intermediate French; intensive drill in form, syntax, vocabulary, and idiom; reading of short stories, novels, and plays.

Su Qtr. 15 cl. Enrollment limited to 20 students. Prereq: Permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, and 103. Students may not register for any other course if they enroll in 112. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in French will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. No audit. GEC/LAR course. FL Admis Cond course.

**150† Introduction to French Culture U 5**

Study of the French cultural heritage with special emphasis on the interrelatedness of society, the arts, philosophy, and writings in the social and human sciences.

Au, Sp Qtrs. 5 cl. Not open to French majors. BER/LAC/LAR course.

**151 Masterpieces of French Literature in Translation U 5**

Introduction to the French novel, drama, and poetry by major modern writers.

Wi Qtr. 4-5 cl. Not open to students with credit for 273. BER/GEC/LAR course.

**201 Introduction to Reading of Literary and Cultural Texts**

Designed to stimulate oral and written expression through the use of literary and cultural readings, to develop the ability to read critically, and to build analytical vocabulary.

Prereq: 104.01 or 5 cr hrs of 104.51 or permission of instructor. Not open to students with credit for 105 or 206.

**201.01 Classroom Track U 5**

Au, Wi, Sp Qtrs. 3 1-1/2-hr cl. Course conducted in French.

**201.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Students register for and complete from 1 to 5 cr hrs during the qtr. Proficiency at the level of 80% is required for advancement from 1 cr hr to the next.

**206† Introduction to Business French U 5**

A preparatory course to the study of business French, focusing on the development of language skills within a business context.

Au Qtr. Prereq: 104. Credit does not count toward the minimum number of hrs required for the French major. Intended for students pursuing the business French sequence (206, 406, and 706). Conducted in French.

**293 Individual Studies U 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**294 Group Studies U 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.

**401 French Grammar Review U 5**

Oral and written review of French grammar.

Su, Au, Wi, Sp Qtrs. Prereq: 105 or 201.

**402 Intermediate French Conversation U 3**

Practice in speaking French, building of practical vocabulary; emphasis on comprehension and oral expression.

Au, Wi, Sp Qtrs. Prereq: 105 or 201. Not open to native speakers of this language through regular course enrollment or EM credit. Conducted in French.

**403 Intermediate French Composition U 3**

Basic kinds of French prose and techniques of composition; practice in writing letters, essays; descriptive, narrative, and personal compositions.

Wi, Sp Qtrs. Prereq: 401. Not open to native speakers of this language through regular course enrollment or EM credit. Conducted in French.

**404 French Pronunciation U 5**

Formation of French sounds, rules of pronunciation and diction; lectures and practical exercises; use of phonetic symbols.

Wi, Sp Qtrs. 5 cl. Prereq: 105 or 201.

**406† Business French I U 5**

An introduction to business French with emphasis on basic business terminology, commercial correspondence, similarities and differences in business transactions, and international procedures.

Wi Qtr. Prereq: 206 or any 400-level course or permission of instructor. Students who successfully complete this course may take the test for the certificate from the Paris Chambre de Commerce. Taught in French.

**421 Masterpieces of French Literature: 19th and 20th Centuries U 5**

Reading and analysis of representative works of the 19th and 20th centuries.

Au, Wi, Sp Qtrs. H421 (honors) may be available to students enrolled in an honors program; others by permission of dept. Prereq: 201; 401 and 403 strongly recommended. This course is available for EM credit.

**422 Masterpieces of French Literature: 17th and 18th Centuries U 5**

Reading and analysis of representative works of the 17th and 18th centuries.

Wi Qtr. H422 (honors) may be available to students enrolled in an honors program; others by permission of dept. Prereq: 201; 401 and 403 strongly recommended. Not open to students with credit for 423 prior to Wi Qtr 1986.

**423 Masterpieces of French Literature: Middle Ages and Renaissance U 5**

Reading and analysis of representative works of the Middle Ages and Renaissance.

Au, Sp Qtrs. H423 (honors) may be available to students enrolled in an honors program; others by permission of dept. Prereq: 201; 401 and 403 strongly recommended.

**424 Masterpieces of Francophonic Literature U 5**

Reading and analysis of representative works of French-speaking Africa, the Caribbean, and Quebec.

Au, Sp Qtrs. 2 2-hr cl. H424 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: 201; 401 and 403 strongly recommended.

**440 Introduction to the Study of Contemporary French Culture U 5**

Introduction to ways of studying major aspects of French culture by means of lectures, readings, research projects, in-class presentations, and research reports.

Au Qtr. 3 1 1/4-hr cl. Prereq: 201. Conducted in French.

**498† Study Tour U 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**498.01 Domestic****498.02 Foreign****571 Basic French for Graduate Students G 5**

Designed primarily for students who have no formal preparation in French; covers basic grammar and vocabulary.

Su, Au Qtrs. Prereq: Grad standing. Credit does not apply to the minimum number of hours required for the master's or doctoral degrees. No audit.

**572 French for Research I G 3**

Su, Wi Qtrs. 3 cl. Prereq: Grade of C or above in 571, or equiv preparation demonstrated by a placement test. Credit does not apply to the minimum number of hours required for the master's or doctoral degrees. No audit. Repeatable twice. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement.

**573 French for Research II G 3**

Su, Sp Qtrs. 3 cl. Prereq: Grade of A or B in 572, or equiv preparation demonstrated by a placement test. Credit does not apply to the minimum number of hours required for the master's or doctoral degrees. No audit. Repeatable twice. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement.

**601 Advanced French Grammar U G 5**

Systematic review of French grammar with composition and other exercises based on contemporary authors; modern tendencies in syntactic analysis.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 401 and another 400-level language or literature course other than 404.

**602 French Translating U G 5**

An introduction to the theory of translation and practice of translation (French to English and English to French) based on texts selecting different types of written communication.

Wi Qtr. 3 1 1/2-hr cl. Prereq: 601 or equiv.

**603 Advanced Spoken and Written French U G 3**

Intensive practice in speaking and writing French; based on contemporary usage.

Au, Sp Qtrs. 3 cl. Prereq: 402, 403, and 601 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit.

**604† Advanced French Pronunciation and Phonostylistics U G 3**

Training in auditory and oral aspects of French pronunciation; special emphasis on analysis of different types of spoken French.

Wi Qtr. 2 cl, 1 lab hr. Prereq: 404 or permission of instructor.

**631 French Literature U G 2-5**

Topic varies.

Su Qtr. 3 cl. Prereq: Three of the following: 421, 422, 423, or 424; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**641 La civilisation française contemporaine U G 5**

Life, institutions, and culture of contemporary France.

Wi Qtr. 3 cl. Prereq: 401 and 402 or 403 and 440. Conducted in French.

**651† French Literature of the Renaissance U G 5**

Selections from Marot, Rabelais, the Pléiade and Montaigne; the age of humanism and the transition from medieval to modern forms and ideas. Wi Qtr. 5 cl. Prereq: Three of the following: 421, 422, 423, or 424; or permission of instructor.

**652 French Literature of the 17th Century U G 5**

The formation of the classic spirit; the perfection of dramatic form and the 17th-century portrait of human life.

Sp Qtr. 5 cl. Prereq: Three of the following: 421, 422, 423, or 424; or permission of instructor.

**653† French Literature of the Enlightenment U G 5**

The ideas of the 18th century in their relation to modern times; emphasis on Montesquieu, Voltaire, Diderot, and Rousseau.

Au Qtr. 5 cl. Prereq: Three of the following: 421, 422, 423, or 424; or permission of instructor.

**654† French Literature from Romanicism to Realism U G 5**

Major currents in French literature from 1800 to 1870.

Au Qtr. 2 2-hr cl. Prereq: Two of the following: 421, 422, 423, or 424.

**655 French Literature from Naturalism to World War I U G 5**

French literature from 1870 to 1914: the naturalist and symbolist schools; the various literary current of the early 20th century.

Au Qtr. 2 2-hr cl. Prereq: Two of the following: 421, 422, 423, or 424.

**656† French Literature between the Two Wars U G 5**

Major literary currents and authors from 1914 to 1940.

Sp Qtr. 2 2-hr cl. Prereq: Two of the following: 421, 422, 423, or 424. Conducted in French.

**657 Literature of the Francophone World U G 5**

2 2-hr cl. Prereq: Two of the following: 421, 422, 423, or 424; or permission of instructor.

**657.01 Francophone Literature from Black Africa and the Caribbean**

Major intellectual and literary currents in black Africa and the Caribbean. Wi Qtr.

**657.02† Literature from North Africa**

Major intellectual and literary currents in francophone North Africa. Wi Qtr.

**657.03† Quebec Literature**

Major intellectual and literary currents in Quebec.

**658 Literature in France since 1940 U G 5**

Major literary currents and authors in France from 1940 to the present.

Wi Qtr. 2 2-hr cl. Prereq: Two of the following: 421, 422, 423, or 424. Conducted in French.

**663 Women in French Literature U G 5**

Examination of representations of women in selected works of French literature from the 17th to the 20th centuries.

Au Qtr. 2 2-hr cl. Prereq: 10 hrs of literature courses or permission of instructor.

**671† French Cinema to 1945 U G 5**

The history and esthetics of French cinema from its beginnings to 1945.

Au Qtr. 2 2-hr cl. Prereq: 10 cr hrs in literature and/or cinema above 200 level or permission of instructor. Taught in English.

**672 French Cinema, 1945 to Present U G 5**

The history and esthetics of French cinema from 1945 to the present.

Au Qtr. 2 2-hr cl. Prereq: 10 cr hrs in literature and/or cinema above 200 level or permission of instructor. Taught in English.

**693 Individual Studies U G 1-15**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701† Advanced French Language Usage U G 5**

Advanced study of present-day French language, with emphasis on more complex and finer morphological, syntactic, semantic, and stylistic distinctions, as well as on idiomatic expression.

Wi Qtr. 2 2-hr cl. Prereq: 601.

**702 Advanced Translation and Comparative Stylistics U G 5**

Theory of translation and a comparative study, through specific exercises and intensive translation, of the stylistic resources of French and English.

Sp Qtr. 3 1 1/2-hr cl. Prereq: 602 or permission of instructor.

**706† France: Geographical Setting and Socio-economic Structures U G 5**

A study of the French geographic, economic, and social environment as it relates to business; parallel emphasis on advanced language skills.

Sp Qtr. Prereq: 406 or permission of instructor. Taught in French.

**710† Contrastive Structures of French and English U G 5**

Comparison of the linguistic structures (phonology, morphology, syntax, and semantics) of French and English with special emphasis on the problems of English-speaking students.

Au Qtr. 2 2-hr cl. Prereq: 601 or permission of instructor.

**712† French Phonology and Morphophonemics U G 5**

The organization of the French sound system, its evolutionary tendencies, and its role in the articulation of the morphemes of the language.

Wi Qtr. 2 2-hr cl. Prereq: 601 or permission of instructor.

**714† Aspects of Morphology, Syntax, and Semantics of French U G 5**

Selected aspects of the morphological, syntactic, and lexical organization of modern French and the role of these subsystems in the communication of meaning.

Sp Qtr. 2 2-hr cl. Prereq: 712 or permission of instructor. Not open to students with credit for 818.

**716 Survey of Medieval French Literature U G 5****716.01† Introduction to Medieval French**

Introduction to medieval French grammar and vocabulary, using a medieval text as vehicle.

Wi Qtr. 2 2-hr cl. Prereq: 601 or permission of instructor. Not open to students with credit for 811. Taught in French.

**716.02† Introduction to Medieval Occitan**

Introduction to the language and literature of medieval Occitan, especially to that of the troubadours.

Sp Qtr. 2 2-hr cl. Prereq: 716.01 or permission of instructor.

**721 Survey of Medieval French Literature U G 5**

Survey of French literature of the Middle Ages from its inception to Villon, with emphasis on different literary genres (epics, narrative fiction, poetry, theatre).

Au Qtr. 2 2-hr cl. Prereq: Three of the following: 421, 422, 423, or permission of instructor.

**741 Topics in French Culture and Civilization U G 5**

Analysis of French culture through the study of selected topics in literatures, film, and social thought; topic varies.

Wi Qtr. 2 2-hr cl. Prereq: 640 or 641 or permission of instructor. Repeatable to a maximum of 15 cr hrs. Taught in French.

**751 Studies in Genre and Mode U G 5**

Intensive study of the history and/or aesthetics of a specific literary genre or mode such as theatre, poetry, irony, humor.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: One 600 level course and permission of instructor for undergraduates. Repeatable to a maximum of 10 cr hrs.

**H783 Honors Research U 3-5**

Offers undergraduates with special aptitudes a greater opportunity to do independent study than is possible in the ordinary course; work in conference, library, or phonetics laboratory.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the French courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Au, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**801 Teaching French at the College Level G 5**

Methods and techniques for teaching French language at the college level.

Au Qtr. Two wks intensive workshop previous to qtr followed by a 2-hr wkly cl. Prereq: Teaching associate in the Dept of French and Italian or permission of instructor. Not open to students with credit for Ed-Hum 801.01 or Ed-T&P 801.01. For students enrolled in this course, the minimum number of credit hours required for graduation is increased by 5 hrs.

Cross-listed in Educational Theory and Practice as 801.01.



**821+ Masterworks of Medieval French Literature G 5**

Intensive study of influential authors and anonymous masterpieces of French literature between 1100 and 1500.

Au Qtr. 2 2-hr cl.

**822 Topics and Problems in Medieval French Literature G 5**

Intensive exploration of a special topic or problem, with readings in relevant criticism and scholarship.

Sp Qtr. 3 cl. Prereq: 821. Repeatable to a maximum of 15 cr hrs.

**823+ Topics and Problems in 16th-Century French Literature G 5**

Intensive exploration of a special topic or problem, with readings in relevant criticism and scholarship.

Wi Qtr. 3 cl. Prereq: 651 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**824+ Topics and Problems in 17th-Century French Literature G 5**

Intensive exploration of a special topic or problem, with readings in literary works and in relevant criticism and scholarship.

Sp Qtr. 3 cl. Prereq: 652 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**825 Topics and Problems in 18th-Century French Literature G 5**

Intensive exploration of a special topic or problem, with readings in literary works and in relevant criticism and scholarship.

Au Qtr. 3 cl. Prereq: 653 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**826 Topics and Problems in 19th-Century French Literature G 5**

Intensive exploration of special topics or problems with readings in literary works in relevant criticism and scholarship.

Wi Qtr. 3 cl. Prereq: 654, 655, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**827 Topics and Problems in 20th-Century French Literature G 5**

Intensive study of a specific topic or problem with readings of selected literary and critical works.

Wi Qtr. 3 cl. Prereq: 656 or equiv. Repeatable to a maximum of 15 cr hrs.

**828 Topics in Francophone Literature G 5**

In-depth study of a theme, genre, movement, or author from a non-European area of the francophone world.

Au Qtr. 1 3-hr cl. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.

**831 Seminar in French Literature G 2-5**

Su (2-3 cr hrs), Au (3-5 cr hrs) Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**833 Seminar in French Literature G 3-5**

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**850+ Seminar in French Linguistics G 5**

Detailed exploration of selected topics in French linguistics with extensive analysis of French language data relevant to the topic.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**870+ Seminar in French Cinema G 3-5**

Detailed exploration of particular topics or periods in French cinema with extensive analysis of individual films and readings in relevant theory and criticism.

Sp Qtr. 2 2-hr cl. Prereq: 671 or 672 or permission of instructor. PhD candidates may repeat to a maximum of 15 cr hrs.

**883 Introduction to Graduate Study in French G 5**

Basic tools for literary research and history and major areas of literary criticism.

Au Qtr. 3 cl. Not open to students with credit for 886. Repeatable to a maximum of 30 cr hrs.

**885\* Introduction to Contemporary Critical Theory G 5**

Selected readings covering the range of critical approaches to literature.

Wi Qtr. 2 2-hr cl.

**887 Problems of Textual Analysis G 5**

Intensive work in literary and linguistic analysis of texts from various periods and genres.

Wi, Sp Qtrs. 2 1-1/2-hr cl. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in 884.

**890 Interdepartmental Studies in Critical Theory G 5**

Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.

Sp Qtr. 2 2-hr or 5 cl. Prereq: Background in critical theory recommended. Repeatable to a maximum of 10 cr hrs. Cross-listed in Comparative Studies in the Humanities, English, German, Spanish, and Women's Studies.

**893 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-15**

Investigation of minor problems in the various fields of French literature and language.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**999 Research in French Language or Literature G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Geodetic Science

404 Cockins Hall, 1958 Neil Avenue, 292-6753

**294 Group Studies U 2-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**597 Mapping the World U 5**

Scientific and technological bases of modern mapping science and its contribution to contemporary world issues.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: Sr standing. GEC/LAR course.

**General Prerequisites for all 600-Level Courses**

Prerequisites for all 600-level courses are Math 153 and Physics 131.

**603 Remote Sensing of Environment U G 4**

The energies of the natural and cultural environment, current remote sensing systems, and case histories of applications in measuring the environment.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: Civil En 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Civil En 603. Cross-listed in Civil Engineering.

**604 Terrain Analysis U G 4**

Principles and applications of photo pattern analysis, geologic and geomorphologic patterns, terrain studies, and land use suitability and capability mapping.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Civil En 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Civil En 604. Cross-listed in Civil Engineering.

**612 Topics in Geodesy U G 4**

Geometry of the ellipsoid; geodetic coordinates computations for short and medium lines; geodetic datums; Earth's gravity field; artificial geodetic Earth satellites; and figure of the Earth.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Survey 511 or permission of instructor. Not open to students with credit for Survey 612 or for grad credit to students with credit for 658, 776 or 777, or Survey 612.

**623 Topics in Photogrammetry U G 4**

Techniques, equipment for mapping and point determination; concept, methods, results of block adjustment; image based maps; computer-assisted and controlled-data processing; terrestrial and space photogrammetry.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 651 and Survey 506; or permission of instructor. Not open to students with credit for 628, 725, 726, 727, or 728.

**626 Land Information Management U G 4**

Land information as a resource in an information society, land information systems (LIS), and issues related to the implementation and development of LIS.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Survey 625 or permission of instructor.

**628 Elements of Analytical Photogrammetry U G 4**

Mathematical models in analytical photogrammetry; measurement and reduction of image coordinates; bundle adjustment; resection and intersection; extended mathematical model; analytical camera calibration; analytical two-stage orientation; the analytical plotter.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 650 and Survey 506. Not open to students with credit for 623.

**630 Fundamentals of Computer-Assisted Cartography U G 4**

Basic principles of cartographic methods as applied to computer-assisted topographic mapping systems and their use in land information management.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: Grad standing in geod sci or written permission of instructor.

**632 Large Scale and Topographic Mapping U G 4**

The concepts, theories, and principles of large scale mapping with emphasis on design, production, and use of digital topographic maps.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 630 or permission of instructor.

**633+ Digital Surface Models U G 4**

Principles of digital surface modeling and their applications with the aid of computer-based techniques.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 630 and 632, or permission of instructor; and 650; or prereq or concur Geog 883.02. Not open to students with credit for 631.

**634 Digital Mapping Systems U G 4**

Survey and evaluation of digital mapping systems with respect to components, accuracy, and efficiency.

Sp Qtr. 1 cl, 3 3-hr labs. Prereq: 633 or permission of instructor.

**636 Map Projections U G 4**

The principal map projections of the sphere; their distortions, properties, and usage.

Wi Qtr. 3 cl, 1 3-hr lab.

**637 Topics in Mapping U G 4**

A survey of cartographic fundamentals in the context of contemporary developments.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 630 or equiv. Not open for grad credit to students with credit for 632, 633, or 732.

**638+ Topics in Land Information Management U G 3**

Overview of topics in geographic and land information systems (GIS/LIS) and land information management (LIM).

Sp Qtr. 3 cl. Prereq or concur: 630 or written permission of instructor. Not open to students with credit for 626 or Survey 625.

**650 Adjustment Computations I U G 5**

Classification of errors; measures of dispersion; variance and covariance; propagation of errors, weights, observation and normal equations, algorithms, and examples; statistical tests; error ellipses.

Au Qtr. 4 cl, 1 3-hr lab. Math 153 or equiv.

**651 Adjustment Computations II U G 4**

A posteriori variances; representation of residuals; condition equations with and without parameters; stochastic or weighted constraints; datum parameters; prior information; special test statistics; algorithms and examples.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 650 or equiv.

**658 Geometric Geodesy U G 4**

Historical development; geometry of the reference ellipsoid; reductions/use of ellipsoid as a reference surface; major geodetic control; introduction to advanced geometric geodesy; principal conformal projections.

Wi Qtr. 4 cl. Prereq: Survey 511 or equiv.

**664 Geodetic Astronomy U G 4**

Stellar coordinate systems; stellar positions and motions; time; star catalogues; principles of position determination.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 650 or equiv.

**693 Individual Studies U G 2-9**

Assigned reading laboratory or field work, under the guidance of a staff member, arranged to meet the requirements of individual students.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-9**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**725 Photogrammetric Triangulation U G 3**

Aerial triangulation by strip formation; adjustment of independent models, and bundle adjustment; practical applications of photogrammetric triangulation; reliability and quality control; network design; on-line triangulation.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 628 and 651. Not open to students with credit for 622 and 724.

**726 Photogrammetric Mapping U G 4**

Analog, semi-analytical, and computer-controlled photogrammetric systems; orientation methods and interactive mapping; DEM data capture and interpolation; orthophotography-plane and differential rectifications; mapping from space.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 628 or permission of instructor. Not open to students with credit for 723.

**728 Digital Photogrammetry U G 4**

Overview of methods, techniques, and systems in digital photogrammetry; image acquisition and enhancement, stereopsis, feature recognition, and interpretation.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 726 and permission of instructor. Not open to students with credit for 829, 830, or 831.

**732 Generalization of Topographic Maps U G 4**

Principles and advanced applications of the generalization of topographic maps.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 633 and 651; or written permission of instructor.

**760\* Advanced Geometric Geodesy U G 5**

Solution of long line problems on the ellipsoid; datum transformations; determination of the size and shape of the reference ellipsoid; fundamentals of three-dimensional geodesy.

Wi Qtr. 4 cl, 1 3-hr lab. Prereq or concur: 658, 776, and 777.

**762 Advanced Adjustment Computations U G 4**

Large patterned systems, Gauss-Markoff model and mixed models; techniques of collocation and its robustification; generalized matrices in geodetic science; estimable and projected parameters; error ellipsoids.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 651 or equiv.

**774\* Spectral Methods and Raster Geometry in Digital Mapping G 4**

Spectral analysis techniques and raster geometry as applied in digital photogrammetry and digital cartography; pattern recognition theories.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: Geol Sci 642.

**776 Gravimetric Geodesy U G 5**

The gravity and its potential; the disturbing potential and its representation; applications and current methods.

Sp Qtr. 4 cl, 1 3-hr lab. Prereq: 651 and 658; or equivs.

**777 Satellite Geodesy U G 4**

Geometric and dynamic applications of artificial satellites in geodesy; determination of station positions and the gravity field of the Earth.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: 664 and 776; or equivs.

**781\* Topics in Geodynamics U G 3**

Theory of Earth rotation; determination of Earth orientation parameters; precession; nutation, polar motion and time, and radio interferometry of extragalactic radio sources; and Earth tides.

Wi Qtr. 3 cl. Prereq: 664.

**828 Advanced Photogrammetric Applications G 4**

Design, application, and analysis of advanced analytical photogrammetric techniques to a variety of measurement tasks.

Wi Qtr. 2 cl, 2 3-hr labs. Prereq: 728 or permission of instructor.

**829 Advanced Digital Image Acquisition in Photogrammetry G 3**

Methods and systems of acquiring digital imagery; theory and applications of error corrections; assessment of image quality.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 774.

**830\* Advanced Methods of Processing Digital Imagery in Photogrammetry G 3**

Utilization of advanced methods of image processing and computer vision techniques as it pertains to digital photogrammetry.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 829 or written permission of instructor.

**831\* Advanced Pattern Recognition and Interpretation Methods in Digital Mapping G 3**

Methods of pattern recognition, feature extraction, feature and object classification, as it pertains to digital photogrammetry and digital cartography.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 830.

**835\* Advanced Cartography G 4**

A review and examination of current research, development, and thinking in cartography with particular attention to mapping from space platforms.

Wi Qtr. 3 cl, 1 1-hr lab. Prereq: 732 or written permission of instructor.

**871\* Advanced Gravimetric Geodesy G 4**

Boundary-value problem; use of spherical harmonics; statistical application; appropriate representations; computations in space; combination of gravimetric and satellite data.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 762 and 777; or equivs.

### 873\* Advanced Satellite Geodesy G 4

Dynamics of earth orbiting satellites; equations of motion and their solutions; advanced data acquisition method; analysis for the gravity field and station positions.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 762 and 777; or equivs.

### 875\* Spectral Methods in Gravimetric Geodesy G 3

Spectral analysis theory and techniques in gravimetric geodesy.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 871.

### 885 Research Principles and Techniques G 2-9

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

### 887 Seminar G 1-5

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

### 894 Group Studies G 2-9

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

### 899 Interdepartmental Seminar G 1-5

Topics to be announced each quarter offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

### 998 Research in Geodetic Science: Thesis G Arr

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. This course is graded S/U.

### 999 Research in Geodetic Science: Dissertation G Arr

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Geography

103 Bricker Hall, 190 North Oval Mall, 292-2514

### 120 Earth Systems II: Atmospheric Environment U 5

Introduction to the characteristics and processes of the Earth's atmosphere and their linkage with other physical systems of the planet and with human activity.

2 1 1/3-hr lec, 1 1 1/3-hr rec. Prereq: Geol Sci 100. Not open to students with credit for 220. BER/GEC/LAR course.

### 200 World Regional Geography U 5

An examination of the human and physical geographic structure of all world regions; defined primarily at the continental scale and classified by their level of development.

Su, Au, Wi, Sp Qtrs. 3 1 1/3-hr cl. H200 (honors) may be available Au Qtr to students enrolled in an honors program or those approved by the UVC or ASC Honors offices. BER/GEC/LAR course. SS Admis Cond course.

### 220 Introduction to Physical Geography U 5

The elements and processes of the natural environment, their characteristics, distribution, and implications in the human habitat.

Su, Au, Wi, Sp Qtrs. 5 cl. H220 (honors) may be available Sp Qtr to students enrolled in an honors program; others with permission of dept. BER/LAC/LAR course. NS Admis Cond course.

### 240 Economic and Social Geography U 5

Geographic analysis of selected economic and social issues at global, national, and metropolitan scales; locational, spatial interaction, and map analysis of population, urbanization, and development issues.

Su, Au, Wi, Sp Qtrs. 5 cl. H240 (honors) may be available Wi Qtr to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course. SS Admis Cond course.

### 280 Map Reading and Interpretation U 5

An introduction to reading topographic and thematic maps; map interpretation, analysis, and use.

Sp Qtr. 3 cl, 2 labs.

### 294† Group Studies U 3-5

Students are given the opportunity to pursue special studies not otherwise offered.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

### 400 Geography of United States and Canada U 5

Geographical analysis of North America; spatial patterns and processes associated with resources, economic structure, population, urbanization, income, and ethnicity at national, regional, and urban scales.

Au, Wi Qtrs. 3 1 1/3-hr cl. BER/GEC course.

### 401 Geography of Ohio U 3

An appraisal of geographic factors in the settlement and development of Ohio; an overview of the evolution of the Ohio economy.

Sp Qtr. 3 cl. Prereq: Either 200, 220, or 240, or equiv.

### 460 Political Geography U 5

The global economy, spatial integration, and uneven development; states, spatial fragmentation, and uneven development; and the politics of space of nations, regions, and localities.

Au Qtr. 3 1 1/3-hr cl. Prereq: Permission of instructor. Not open to students with credit for 560. BER/GEC/LAR course.

### 505 Geography of Latin America U G 4

Geographic analysis of Middle and South America emphasizing the interrelationships of the resource base, cultural characteristics, and outside influences upon economic development.

Au, Wi Qtrs. 3 cl. Prereq: Either 200, 220, or 240, or equiv; or permission of instructor.

#### 505.01 Middle America

Au Qtr.

#### 505.02 South America

Wi Qtr.

### 510 Geography of Western Europe U G 4

Geographic factors in the economic, social, and political progress of the nations of Western Europe; major problems of the area in the light of their geographic background.

Sp Qtr. 3 cl. Prereq: Either 200, 220, 240, or equiv; or permission of instructor.

### 511† Geography of Eastern Europe U G 4

Resources, their assessment, and development, and related problems in Eastern Europe; the geographic significance of each state to the Communist bloc and to the West.

Wi Qtr. 3 cl. Prereq: Either 200, 220, or 240, or equiv; or permission of instructor.

### 512 Geography of the Soviet Union U G 4

The major regional divisions of the Soviet Union; the resource base in relation to the economic and political aims of the Soviet state.

Au Qtr. 3 cl. Prereq: Either 200, 220, or 240, or equiv; or permission of instructor.

### 520 Climatology U G 5

The elements and the controls of climate; types of climate and their distribution; climates and their effects on the economic and other activities of humans.

Au, Wi Qtrs. 5 cl.

### 530 Conservation of Natural Resources U G 5

Philosophy of resource use; appraisal of resource base; costs of resource development and conservation; resource perception, utilization, and alternatives.

Wi Qtr. 3 cl.

### 580 Elements of Cartography U G 5

A study of the cartographic techniques of map compilation and presentation including generalization, symbolization, reproduction, and simple computer mapping with an emphasis on thematic mapping.

Au, Sp Qtrs. 2 cl, 2 2-hr labs.

### 597 World Urbanization U 5

An examination of geographic aspects of the urbanization process in the world's major regions; interrelationships between urbanization and economic development.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Sr standing. Not open to students with credit for 450. GEC/LAR course.

### Antarctic Marine Ecology and Policy

See Int Stds/Nat Res/Zoology 597.02.

### 605 Special Problems in the Geography of Latin America U G 5

The analysis of selected topical problems in Latin American geography; typical problem areas are urbanization, industrialization, transportation, agricultural development, and regional development.

Wi Qtr. 3 cl. Prereq: 505 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

### 608 South Africa: Society and Space U G 5

The geography of apartheid; its social and historical conditions; the changing geography of apartheid and its politics; South African exceptionalism.

Wi Qtr. 2 2-hr cl.

### 612 Special Problems in the Geography of the U.S.S.R. U G 5

Spatial analysis of selected topical problems in Soviet geography.

Wi Qtr. 4 cl. Prereq: 512 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**620 Synoptic Meteorology Laboratory U G 3**

Introduction to reading and interpretation of synoptic weather maps and diagrams- and data-communications systems.

Au Qtr. 2 cl, 1 lab hr. Prereq or concur: 520 or Atmos Sc 230. Not open to students with credit for Atmos Sc 620. Cross-listed in Atmospheric Sciences.

**622 Microclimatology U G 5****622.01 Boundary Layer Climatology**

Theory of exchanges of energy and mass at the Earth-atmosphere interface as it relates to microclimates with particular emphasis upon radiation and climate.

Wi Qtr. 5 cl. Prereq: 520 or Atmos Sc 230 or permission of instructor, and Physics 132.

**622.02\* Microclimatological Measurements**

Practical experience in the fabrication of instruments, deployment of measurement systems in the field, and recording of data related to microclimates.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 622.01.

**623 Synoptic Meteorology U G 5**

The theory and practice of weather forecasting.

**623.01 Synoptic Analysis and Forecasting**

Theory and practice in synoptic weather analysis and forecasting.

Wi Qtr. 5 cl. Prereq: 520 or Atmos Sc 230 or Physics 503, and Atmos Sc 620 or Geog. 620; and prereq or concur: Physics 132. Not open to students with credit for 623.

**623.02 Severe Storm Forecasting by Radar and Satellite**

The theory and application of radar and satellite imagery in weather forecasting; emphasis on severe thunderstorms, tornadoes, and hurricanes; analysis of their evolution and structure.

Sp Qtr. 2 2-hr cl. Prereq: 623 or 623.01.

**640 Industrial Location U G 5**

Industrial location theory and its application to spatial patterns of manufacturing and to problems of industrial development.

Au Qtr. 3 cl. Prereq: Permission of instructor.

**642 Geography of Development U G 5**

Spatial aspects of economic development; spatial analysis of traditional economics, industrial regions, transport linkages, and migration patterns in developing countries..

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**645 Geography of Transportation U G 5**

Relation between transportation and spatial organization; selected analytical models dealing with traffic demand, network configuration, and allocation of transport facilities; application to selected problems.

Au, Wi Qtrs. 3 cl.

**647 Locational Analysis U G 5**

Historical review of major location theories and evaluation of application of such theories to geographic problems.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**650 Urban Geography U G 5**

Origin and growth of cities; structure and function of urban centers, their areal expansion, and intertrade center relations, each examined in relation to city planning.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor.

**660 Urban Political Geography U G 5**

The changing politics of space in cities: class, neighborhood, and workplace in the industrial and the post-industrial city.

Wi Qtr. 3 cl. Prereq: 560 or equiv and permission of instructor.

**670 Population Geography U G 5**

Analysis of population distributions, locational arrangements of growth, densities, and migration flows; spatial relationships between population variables and social, economic, and environmental factors.

Wi Qtr. 3 cl. Prereq: 240.

**680 Numerical Cartography U G 5**

An examination of the theory and methods of machine-oriented numerical cartography.

Wi Qtr. 2 2-hr cl. Prereq: 580 and Math 150; or equivs.

**682 Individual Studies in Cartography U G 3-5**

Individual study of cartographic subjects; map compilation, cartographic classification, regionalization, and multi-dimensional representation, computer mapping and real-time computer cartographics.

Au, Wi, Sp Qtrs. Conf and lab. Prereq: Permission of instructor. This course is graded S/U.

**684† Geographic and Land Information Systems U G 4**

An introduction to the principles and operations of geographic and land information systems.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 580 or Geod Sci 630 or written permission of instructor. Not open to students with credit for Geod Sci 684. Cross-listed in Geodetic Science.

**685 Introduction to Geographic Information Systems U G 5**

Historical development of geographic information systems (GIS); relationship to cartography and traditional spatial analysis; and selected case studies of GIS applications.

Au Qtr. 2 2-hr cl, 1 2-hr lab.

**687 Design and Implementation of Geographic Information U G 5**

Introduction to the design of geographic information systems (GIS), institutional context of geographic information systems; design; role of data base design; and evaluation of GIS.

Sp Qtr. 2 2-hr cl. Prereq: 685 or Nat Res 745 or permission of instructor.

**693 Individual Studies U G 1-15**

Individual study of a special problem or of a particular region.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable with permission of instructor. This course is graded S/U.

**694 Group Studies U G 3-5**

Group study of special topics in various fields of geography.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**695 Undergraduate Seminar in Applied Geography U 5**

The practical application of theoretical geographical concepts to problems in the local area.

Sp Qtr. 2 2-hr cl. Prereq: 20 cr hrs in geog.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Student will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**Advanced Topics in National Security**

See NSP Stds 702.

**740 Advanced Locational Analysis U G 5**

Advanced problems in location analysis, application of programming techniques and spatial equilibrium analysis.

Sp Qtr. 3 cl. Prereq: 647 or permission of instructor.

**780 Analytical Cartography U G 5**

An examination of the theory and methods of analytical cartography.

Sp Qtr. 2 2-hr cl, 2-hr lab. Prereq: 680, 795 or equiv, and Math 152 or equiv; or prereq or concur: Geod Sci 631.

**782 Interactive Cartographic Systems U G 5**

An examination of the theory and methods of developing, building, and implementing interactive cartographic systems.

Au Qtr. 2 2-hr cl, 2-hr lab. Prereq: 780.

**H783 Honors Research U 3-5**

A program of individual study arranged for students enrolled in the honors program with individual conferences and reports; requires presentation and oral defense of an honors thesis.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the geog courses taken and an average of at least B in the remainder; written permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degree BA *with distinction* in geog. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

**784† Geographic Information Systems U G 5**

An examination of the theories and methods of the design, building, and implementation of geographic information systems.

Sp Qtr. 2 2-hr cl. Prereq: 684 or Geod Sci 684, and 780.

**785 Data Input Operations in GIS/Cartography U G 5**

Examination of instrumentation and methods by which digital spatial databases are created for subsequent use in cartography and geographic information systems.

Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 580, 685, and 687; or permission of instructor.

**787 Advanced Applications in Geographic Information Systems U G 5**

Examination of selected problems relating to the application of geographic information system technology to various topical areas; the topic varies each time course is offered, and topics may include climatology, urban geography, and biogeography.

Au Qtr. 2 3-hr cl. Prereq: 685 and 687, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**795 Seminar in Geography U G 5**

Introduction to research procedures, problem formulation, and application of research techniques in geography.

Au, Wi, Sp Qtrs. 2 2-hr cl. Repeatable to a maximum of 20 cr hrs.

**Studies in National Security Policy**

See NSP Std 795.

**800 Seminars in Regional Geography G 3-5**

The development of theory in regional development and its application to selected problems.

Each decimal subdivision repeatable to a maximum of 20 cr hrs.

**800.01 Theory of Regional Development**

Wi Qtr. 2 cl.

**800.02 Problems in Regional Development**

Sp Qtr. 2 cl.

**820 Seminars in Physical Geography G 3-5**

Au, Wi, Sp Qtrs. 2 cl. Each decimal subdivision repeatable to a maximum of 20 cr hrs.

**820.01 Problems in Climatology****820.03 Special Problems****821 Dynamic Climatology G 5**

Dynamics, thermodynamics, energy conservation, flows, conversion processes; large scale circulation patterns with particular emphasis upon turbulence at the synoptic scale; weather processes; regional climates.

Wi Qtr. 2 2-hr cl. Prereq: 622.01 or permission of instructor.

**822 Microclimatology G 5**

Radiation and turbulence processes, conduction; variation in wind, temperature, humidity, soil moisture, evaporation, soil temperature; influence of vegetation and artificial structures.

Sp Qtr. 2 2-hr cl. Prereq: 620 or 622.01 or permission of instructor.

**823 Applied Climatology G 5**

Analysis of climatic and environmental change on various time scales; human impact on climate; theory and application of long-range and climate forecasting.

Sp Qtr. 2 2-hr cl. Prereq: 623.01 or permission of instructor.

**840 Seminars in Location Analysis G 3-5**

The development of theory in location analysis and its application to selected problems.

Each decimal subdivision repeatable to a maximum of 20 cr hrs.

**840.01 Location Theory**

Au, Wi, Sp Qtrs. 2 cl.

**840.02 Problems**

Au, Wi, Sp Qtrs. 2 cl.

**840.03 Approaches and Issues in Industrial Geography**

Classical/neoclassical, behavioral, and structural approaches in industrial geography; current issues and problems of industrial restructuring.

Sp Qtr. 2 2-hr cl.

**845 Seminars in Transportation Geography G 3-5**

The development of theory in transportation geography and its application to selected problems.

Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 30 cr hrs.

**845.01 Theory of Transportation Geography****850 Seminars in Urban Geography G 3-5**

The development of theory in urban geography and its application to selected problems.

Au, Wi, Sp Qtrs. 2 cl. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**850.01 Spatial Organization of the City**

Intra-urban analysis, density and land value gradients, residential differentiation, neighborhood and community, and the urban development process.

**850.02 Urban Systems Analysis**

Inter-urban analysis; theory of the evolution of urban systems, structural characteristics of sets of cities, recent processes of change, notably deconcentration.

**850.03 Third World Urbanization**

Examination of role of cities in development processes and their characteristics, historical evolution, related policies, and other aspects such as migration, innovation diffusion, and labor markets.

**860 Seminars in Political Geography G 3-5**

The development of theory in political geography and its application to selected problems.

Sp Qtr. Prereq: 660 or permission of instructor. Each decimal subdivision repeatable to a maximum of 30 cr hrs.

**860.01 Theory of Political Geography****860.02 Problems in Political Geography****870 Seminars in Population and Social Geography G 3-5**

The development of theory in population and social geography and its application to selected problems.

Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 30 cr hrs.

**870.01 Theory of Population and Social Geography****870.02 Problems in Population and Social Geography****880 Seminars in Cartography G 3-5**

Readings and research in cartography.

Au Qtr. Prereq: 780 or written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**882 Development of Geographic Thought G 4**

The evolution of concepts concerning the nature, scope, and methodology of geography; present focus and trends as reflected in current literature.

Au Qtr. 3 cl.

**883 Application of Quantitative Methods in Geography G 4**

Application of quantitative methods to geographic problems; spatial statistics, area sampling, maps of residuals, regionalization methods, and simulation maps.

Wi, Sp Qtrs. 2 cl, 2 lab hrs. Prereq: Course in introductory statistics and permission of instructor. Decimal subdivisions to be taken in sequence.

**883.01 Applications I****883.02 Applications II****889 Seminars in Geography G 1**

Topics to be announced each quarter.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**Atmospheric Sciences Seminar**

See Atmos Sc 881.

**896 Interdepartmental Seminar in Polar and Alpine Studies G 1-3**

A seminar on selected topics involving anthropology, biology, climatology, exploration, geology, glaciology, microbiology, and soils.

Sp Qtr. 1-3 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. Given cooperatively by the Byrd Polar Research Center, the College of Biological Sciences, and the departments of Geography, Geological Sciences, Plant Biology, and Zoology.

**899 Interdepartmental Seminars G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interests; topics to be announced each quarter.

**983 Special Topics in Quantitative Geography G 5**

Applications of advanced mathematical and statistical models to problems in geographical analysis.

Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: 883.01 and 883.02. Repeatable to a maximum of 15 cr hrs.

**999 Research in Geography: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Geological Sciences

291 Watts Hall, 2041 College Road, 292-2721

**100 Earth Systems I: Geologic Environment U 5**

The materials of the Earth's crust, the processes that produce and modify them, and the development of the Earth and its life forms through time.

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab, 1 half-day field trip. Not open to students with credit for 121 or 122. Not intended for ASC BS students. This course is available for EM credit. BER/GEC/LAR course. NS Admis Cond course.

**107 Field-based Introduction to Oceanography U 3**

Origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance. Krissek.

Su Qtr. 1 week, full-time at Franz Theodore Stone Lab. Prereq: Permission of instructor.

**110 History of Life on Earth--Global Change in the Biosphere U 5**

3.5 billion years of biosphere global change; introduction to major evolutionary and extinction events; processes responsible for change; and biosphere, atmosphere, and lithosphere interrelationships. Ausich and Babcock.

Wi Qtr. 4 cl, 1 lab/discussion. Prereq: 100 or Biology 102 or 114, or Zoology 201, or permission of instructor. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

**121 Physical Geology U 5**

Minerals and rocks and their origin; land forms and how they are produced; structural features of the Earth's crust.

Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. H121 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Math 075 or 076 or 102, or Math Placement Level R. Recommended first course in geol sci for science majors. This course is available for EM credit. BER/GEC/LAR course. NS Admis Cond course.

**122 Historical Geology U 5**

The history of the Earth and its inhabitants through geologic time.

Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. H122 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 121. Recommended second course in geol sci for science majors. This course is available for EM credit. BER/GEC/LAR course. NS Admis Cond course.

**201 Introduction to Paleontology U 5**

An introduction to animal and plant groups significant in the geologic record. Ausich and Bergstrom.

Sp Qtr. 4 cl, 1 2-hr lab, 1 all-day field trip. Prereq: 122 and 10 cr hrs in biological sciences.

**203 Geology and the Environment U 5**

Application of basic geologic knowledge to problems resulting from society's use of the Earth and its resources. Krissek, McKenzie, and Thompson.

Au, Sp Qtrs. 4 cl, 2 3-hr lab. Prereq: 100 or 121. Not open to students with credit for 103. BER/GEC/LAR course. NS Admis Cond course.

**204 Water Resources U 5**

Occurrence, movement, and behavior of water in the hydrologic cycle with reference to scientific and technological problems relating to water-resources development and conservation. Bair and Chin.

Wi Qtr. 5 cl. Prereq: 121. BER/LAC/LAR course. NS Admis Cond course.

**205 Physical Geology of the Earthlike Planets U 5**

Comparison of the geological processes of Earth to those on the Moon, Mars, Venus, and Mercury with particular attention to surface environments. Faure.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 121. BER/GEC/LAR course.

**206 Physical Oceanography and Marine Geology U 5**

The origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance. Krissek and Webb.

Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 100 or 106. BER/GEC/LAR course. NS Admis Cond course.

**210 Energy, Mineral Resources, and Society U 5**

Geological origin, world distribution, and uses of mineral resources critical to society; topics include mineral and fossil fuels, metallic ores, and industrial minerals. Pride.

Wi Qtr. 5 cl. Prereq: 100 or 121. BER/GEC/LAR course. NS Admis Cond course.

**212 Common Minerals and Rocks U 3**

A study of the common minerals and rocks, their associations, occurrences, identifying properties, and origin. Elliot.

Sp Qtr. 3 2-hr labs. Prereq: 121 and Chem 121. Not open to students with credit for 223. BER/LAC/LAR course.

**221 Introductory Mineralogy and Crystallography U 5**

Internal and external symmetry of minerals; relationship of physical properties such as cleavage, color, hardness to crystal structure; sight identification of about 80 minerals. Tettendorf.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: Chem 122. Not open to students with credit for 414.

**222 Introductory Optical Mineralogy U 5**

Elements of optical mineralogy; mineral properties in plane and cross-polarized light; mineral identification in powders and thin-sections; crystal chemistry of rock-forming minerals. Downs.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 221.

**223 Introductory Petrology U 5**

Origin, occurrence, association, and mineral composition of the common rocks; laboratory includes work by megascopic and microscopic methods. Barton.

Sp Qtr. 2 cl, 3 2-hr labs. Prereq: 121 and 222. Not open to students with credit for 212.

**280 Introduction to Geophysics U 5**

Introduction to principles of seismic, electrical, gravity, magnetic, and radiometric methods for subsurface investigation; applications to petroleum and mineral exploration, groundwater, and engineering investigations. Daniels and Whillans.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 121. BER/GEC/LAR course.

**293 Individual Studies U 1-3**

Special problems in the geological sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Group study of special topics in various fields of the geological sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**414 Crystallography U 3**

Periodicity and symmetry in crystalline materials, coordinate systems and lattices, crystallographic notation and calculations, group concepts, graphical methods, and selected applications. Tettendorf.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: Math 153. Not open to students with credit for 214.

**502 Stratigraphy and Sedimentation U G 5**

Principles of, and procedures in, stratigraphy and sedimentation, illustrated by field and laboratory studies of sedimentary rocks. Babcock, Collinson, James, and Krissek.

Au, Sp Qtrs. 4 cl, 1 2-hr lab, and weekend field trips. Prereq: 201 and 223.

**530 Structural Geology U G 5**

An introduction to the principles of rock deformation, the classification and physical origin of rock structures, and crustal tectonic processes. Wilson.

Sp Qtr. 3 cl, 2 2-hr labs, 1 3-to-4 day field trip. Prereq: 121 and Physics 131.

**550 Geomorphology U G 5**

Detailed study of processes that shape the land surface and the forms produced under diverse climates. McKenzie.

Sp Qtr. 4 cl, 1 2-hr lab, field trips. Prereq: 122 and Chem 122, or permission of instructor.

**570 Senior Thesis U G 1**

The preparation of a report of professional quality, based on a research project. Tettendorf.

Su, Au, Wi, Sp Qtrs. Prereq: Sr standing in geol sci and permission of instructor. To be taken during the qtr the student intends to hand in the thesis.

**580 Field Work and Laboratory Work in Earth Science U G 5**

Essentials of field and laboratory observation, mapping and data accumulation in the solution of earth-science problems. McKenzie and Pride.

Su Qtr. Prereq: 30 qtr hrs in geol sci, geog, astron, or meteor, with a minimum of 15 qtr hrs in geol sci; Ed-T&P 551 and permission of instructor; Geol Sci 201, 212, and 550 recommended. Repeatable to a maximum of 10 cr hrs. May not be used to satisfy BS degree requirements in geol sci.

**581 Field Geology I U G 5**

Concentrated training in the basic essentials of field observation and mapping; the work is done in central Utah, with headquarters in Ephraim. Collinson, Elliot, Noltemier, and Wilson.

Su (1st term) Qtr. Requires full time of student. Prereq: 223, 530, and written permission of instructor.

**582 Field Geology II U G 4**

Continuation of 581.

Su (2nd term) Qtr. Requires full time of student. Prereq: 581.

**583 Field Geology for Science Teachers U G 3**

Application of geological principles and interpretation of earth features in such selected areas as the Appalachian Mountain system, the Bahamas, etc. James and McKenzie.

Wi, Sp Qtrs. 5-10 days between Au and Wi or Wi and Sp Qtrs; pre-trip meeting and post-trip meetings and reports. Prereq: 100 or equiv and permission of instructor. Intended primarily for in-service teachers and education majors. May not be used to satisfy BS degree requirements in geol sci. Repeatable to a maximum of 9 cr hrs.

**584 Principles of Oceanography for Science Teachers U G 3**

Origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance. Krissek.

Su Qtr. 1 week. Prereq: 30 qtr hrs in physical sciences or biological sciences and permission of instructor. Intended for in-service teachers and education majors. May not be used to satisfy BS, MS, or PhD requirements in geol sci. Not open to students with credit for 107 or 206.

**Antarctic Marine Ecology and Policy**

See Int Stds/Nat Res/Zoology 597.02.

**600 Sedimentation and Sedimentary Rocks U G 5**

Source, dispersal, and accumulation of sediments; the interpretation of the environmental distribution of sedimentary rocks. Krissek.

Au Qtr. 4 1-hr cl, 1 2-hr lab arr. Prereq: 502.

**601 Sedimentary Petrology U G 5**

Identification and interpretation of sedimentary rocks based on mineralogic and textural study of thin sections and hand specimens. Ausich, Collinson, James, and Krissek.

Prereq: 600 or permission of instructor.

**601.01 Sedimentary Petrology of Sandstones**

Wi Qtr. 3 cl, 2 2-hr labs.

**601.02 Sedimentary Petrology of Carbonate Rocks and Shales**

Sp Qtr. 3 cl, 2 2-hr labs.

**602 Carbonate Depositional Systems****602.01 Carbonate Depositional Systems I U G 3**

The study of carbonates in modern settings including the origin, composition, and identification of constituents and cement, and depositional environments. Collinson.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 502 or 600, or equiv.

**602.02 Carbonate Depositional Systems II U G 2**

The field study of carbonates in a modern setting such as the Bahamas or southern Florida. Collinson.

Sp Qtr. 7-day field trip preceding the qtr. Prereq: 602.01 and permission of instructor.

**603 Stratigraphy U G 5**

Advanced study of the principles and procedures of stratigraphic nomenclature, subdivision, correlation, and interpretation, with examples from the international stratigraphic record. Ausich, Bergstrom, and Collinson.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 502.

**604 Sequence Stratigraphy U G 5**

Advanced study of the principles and practice of sequence stratigraphy; cyclicity in the stratigraphic record; computer modeling of sedimentary patterns; and reservoir characterization.

Au, Sp Qtrs. 4 cl, 1 2-hr lab, field trips. Prereq: 502 or equiv.

**613 Micropaleontology U G 5**

Advanced consideration of the preservation, collection, morphology, development, interrelations, and stratigraphic distribution of major groups of animal microfossils. Bergstrom and Webb.

Au Qtr. 2 cl, 3 2-hr labs. Prereq: 201 or equiv. Not open to students with credit for 614 taken in Au Qtr.

**614 Paleobiology U G 5**

Advanced consideration of the preservation, morphology, development, and interrelations of major groups of animal megafossils. Ausich, Babcock, and Bergstrom.

Wi Qtr. 2 cl, 3 2-hr labs. Prereq: 201 or equiv.

**615 Paleocology U G 5**

Advanced treatment of autecology and benthic marine community paleocology from both conceptual and procedural viewpoints. Ausich.

Sp Qtr. 4 cl, 1 2-hr lab, 1 wkend field trip. Prereq: 614 or permission of instructor.

**617 Petrography U G 5**

Interpretation of mineral assemblages and textures of igneous, metamorphic, and sedimentary rocks; cathodoluminescence and fluorescence petrography; and electron probe microanalysis will supplement standard techniques. Barton and James.

Au Qtr. 1 cl, 4 2-hr labs. Prereq: 223 or equiv.

**618 Advanced Historical Geology U G 5**

Principles of historical analysis, with emphasis on the geologic history of North America in the Paleozoic, Mesozoic, and Cenozoic eras. Ausich, Krissek, and Webb.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 502 or equiv.

**620 Principles of Isotope Geology U G 5**

Theory of natural isotope abundance variations and applications to problems in the earth sciences. Foland.

Au Qtr. 5 cl. Prereq: Sr standing in geol sci or related fields.

**621 Introduction to Geochemistry U G 5**

Applications of the law of mass action and chemical thermodynamics to mineral equilibria of geological and geochemical interest. Faure.

Au Qtr. 5 cl. Prereq: Sr standing in geol sci or related fields; Chem 123 or permission of instructor.

**624\* Microscopy of Opaque Minerals U G 3**

Application of the petrographic microscope to the study of opaque minerals and ores, their identification, textures, and paragenesis; polished section preparation, etch tests, and micro-chemical tests. Pride.

Wi Qtr. 3 2-hr labs. Prereq: 623 or equiv.

**625 Igneous Petrology U G 5**

Petrography, petrogenesis, and occurrence of igneous rocks, with special emphasis on phase equilibria; macroscopic and microscopic examination of igneous and petrographic suites in the laboratory. Barton and Elliot.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 223 and permission of instructor, or 623.

**Paleobotany**

See Plant Biology 625. Offered in cooperation with Geological Sciences.

**626 Metamorphic Petrology U G 5**

Petrography, petrogenesis, and occurrence of metamorphic rocks; macroscopic and microscopic examination of metamorphic rocks and selected petrographic suites in the laboratory. Barton.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: 223 and permission of instructor, or 623.

**Palynology**

See Plant Biology 626. Offered in cooperation with Geological Sciences.

**627\* Environmental Geochemistry U G 5**

Application of principles of geochemistry and isotope geology to an understanding of environmental processes, including the characterization of natural water, weathering products, and sedimentary rocks. Faure.

Wi Qtr. 5 cl. Prereq: 621.

**629 Petrologic Phase Equilibria U G 5**

Application of phase equilibrium diagrams to problems of igneous and metamorphic petrology. Barton and Foland.

Au Qtr. 5 cl. Prereq: Sr standing in geol sci or related fields, or permission of instructor.

**635\* Advanced Crystallography U G 4**

Point isometries, derivation of crystallographic point groups, space-lattice types, and crystallographic space-group types; crystallographic calculations emphasizing the metrical matrix and changes of basis. Downs.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 221 or 414 or equiv.

**636 Advanced Mineralogy U G 4**

Crystallography and crystal chemistry of the rock-forming silicate minerals. Downs.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 221 or 414 or equiv.

**637 X-Ray Diffraction U G 3**

Emphasis on diffraction by crystalline powders; factors affecting the position and intensity of diffraction maxima; applications include qualitative and quantitative analysis. Tietjenhorst.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 414 or permission of instructor.

**639\* Clay Mineralogy U G 3**

Relationship of structures and chemical composition of clay minerals to properties, origin, occurrence, and applications; evaluation of X-ray, differential thermal, infrared, and electron microscope data. Tietjenhorst.

Sp Qtr. 3 cl. Prereq: 637 or permission of instructor.

**641 Geostatistics Laboratory U G 2**

Computer-oriented application of statistical methods to geodata analysis; topics include error analysis, applied geodata probability and statistics, sampling, least squares, and linear regression. von Frese.

Wi Qtr. 2 cl. Prereq: Stat 528, prereq or concur: Stat 529, or written permission of instructor.

**642 Geomathematical Methods U G 4**

Computer-oriented application of numerical methods to geodata analysis; topics include dimensional analysis, similitude, geodata modeling, profile and map analysis, multivariate geodata analysis, and graphics. von Frese.

Sp Qtr. 4 cl. Prereq: 641 and Math 153, or written permission of instructor.

**644\* Geotectonic Evolution of the Continents U G 5**

Survey of lithotectonic assemblages and structural associations in Archean, Proterozoic, and Phanerozoic orogenic terranes in relation to tectonic models for crustal evolution. Wilson.

Wi Qtr. 5 cl. Prereq: 223, 502, and 530; or written permission of instructor.

**645 Advanced Structural Geology U G 5**

Mechanisms of deformation; dynamic and kinematic analysis of rock structures; field and laboratory methods of structural analysis. Wilson.

Sp Qtr. 4 cl, 1 2-hr lab, 1 4-day field trip. Prereq: 530.



**646 Geodynamics U G 5**

Application of mathematical and physical methods to the solution of geologic problems in heat flow, plate tectonics, mountain building, ground-water flow, and river mechanics. Whillans.

Au Qtr. 5 cl. Prereq: 530 and written permission of instructor.

**650 Glacial and Pleistocene Geology U G 5**

The features produced by glaciers, present and past, and the history of glaciation during the Pleistocene. Whillans.

Sp Qtr. 5 cl, field trips. Prereq: 550.

**651 Hydrogeology U G 5**

Geologic and hydrologic factors controlling the occurrence, movement, storage, and chemical quality of ground water; exploration, evaluation, development, and management of ground-water resources. Bair.

Au Qtr. 4 cl, 1 2-hr lab, 1 all-day field trip. Prereq: 121 and Math 153.

**652 Hydrogeologic Field Studies U G 5**

Field study of various hydrogeologic terranes incorporating the use of hydrologic field equipment and testing procedures. Bair.

Sp Qtr. 3 cl, 3-1/2-day field trips, 2 3-day field trips. Prereq: 651.

**660 Geology of Mineral Deposits U G 5****660.01 Geology of Metallic Deposits**

The occurrence, origin, distribution, properties, and uses of the metallic minerals. Pride.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: 223.

**660.02 Geology of Nonmetallic Mineral Deposits**

The occurrence, origin, distribution, properties, and uses of the nonmetallic minerals. Elliot.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 223.

**670 General and Economic Geology of Selected Areas U G 3 or 5**

Concentrated field study of the stratigraphy, structural geology, tectonics, petrology, and geomorphology of a selected region, with special attention to the economic utilization of earth materials. Elliot, James, McKenzie, Pride, and Wilson.

Au Qtr. 5 or 10-day field trip preceding the qtr. Post-trip readings and report required. Prereq: 502, 530, and 550; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**675 Use of the Scanning Electron Microscope U G 1**

Instruction in the use of the scanning electron microscope. Webb.

Au, Sp Qtrs. Lab arr. Prereq: Written permission of instructor. This course is graded S/U.

**680 Earth Physics U G 5**

Physics of the solid Earth: the internal structure, density, seismic velocities, gravity and geomagnetic fields; thermal history and surface heat flux, mantle convection; crustal evolution and tectonic models of the crust and lithosphere. Noltmeyer.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: 530, Math 153, and Physics 133. Not open to students with credit for 640.

**681 Geophysical Exploration: Gravity and Magnetism U G 3**

Gravity and magnetic exploration principles applied to subsurface investigations; field exercises involve computer processing of data collected using professional instruments. Noltmeyer and von Frese.

Sp Qtr. 2 cl, 1 2-hr lab, field trip. Prereq: Math 153 and Physics 133, or permission of instructor.

**682 Geophysical Exploration: Seismic Methods U G 5**

Seismic refraction and reflection exploration principles applied to subsurface investigations; field exercises involve computer processing of data collected using professional instruments. Daniels and von Frese.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: Math 153 and Physics 133, or permission of instructor.

**683 Geophysical Exploration: Electrical Methods U G 5**

Resistivity, self-potential, telluric, magnetotelluric and induced polarization exploration principles applied to subsurface investigations; field exercises involve computer processing of data collected using professional instruments. Daniels and von Frese.

Wi Qtr. 4 cl, 1 2-hr lab, field trip. Prereq: Math 153 and Physics 133, or permission of instructor.

**684\* Geophysical Exploration: Borehole Methods U G 5**

Principles of nuclear, electrical, potential field, and acoustic borehole geophysical techniques; operation and interpretation of geophysical well logging measurements for petroleum, mining, engineering, and ground-water investigations. Daniels.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: Permission of instructor.

**693 Individual Studies U G 1-5**

Special problems in any branch of the geological sciences for which the student has the proper qualifications.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs in any combination of decimal subdivisions. These courses are graded S/U.

**693.01 Economic Geology****693.02 Engineering Geology****693.03 Extraterrestrial Studies****693.04 Field Geology****693.05 Geochemistry****693.06 Geomorphology****693.07 Geophysics****693.08 Glaciology and Glacial Geology****693.09 History of the Geological Sciences****693.10 Hydrogeology****693.11 Marine Geology, Limnology, and Oceanography****693.12 Paleontology****693.13 Petrology and Petrography****693.14 Photogeology****693.15 Sedimentation****693.16 Stratigraphy****693.17 Structural Geology****693.18 Earth Science Education****693.19 Unspecified****693.20 Thermochemical Mineralogy****693.21 Crystallochemical Mineralogy****693.22 X-Ray Mineralogy****693.23 Clay Mineralogy****693.24 Physical Properties of Crystals****694 Group Studies U G 1-5**

Group study of special topics in various fields of the geological sciences.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**703\* Principles of Biostratigraphy U G 3**

Principles of zonal and azonal biostratigraphy; definition, identification, and correlation of standard biostratigraphic units; quantitative development of chronostratigraphically significant azonal frameworks. Ausich, Babcock, Bergstrom, and Webb.

Sp Qtr. 3 cl. Prereq: 201 or 613 or 614, and 603 or equiv; or written permission of instructor.

**713\* Taxonomy and Phylogeny in the Fossil Record U G 3**

Theory and practice of taxonomy and phylogenetic reconstruction as applied to organisms in the fossil record. Ausich and Babcock.

Au Qtr. 3 cl. Prereq: 614 or permission of instructor.

**714\* Biometry U G 3**

Biometric principles and methods as applied to the solution of taxonomic, ontogenetic, and evolutionary problems in the fossil record. Ausich and Babcock.

Au Qtr. 3 cl. Prereq: 614 and 641 or equiv; or permission of instructor.

**717\* Containment and Remediation of Contaminants in Groundwater U G 5**

Examination of approaches to contain and/or remediate contaminants in groundwater, including site assessments, design approaches, and case studies. Chin.

Sp Qtr. 3 cl, 2 labs. Prereq: 651; 752 recommended.

**718 Geochemistry of Natural Waters U G 5**

Examination of the processes that control chemical equilibria in natural waters: acid/base reactions, metal complexation/speciation, and oxidation-reduction processes. Chin.

Sp Qtr. 4 cl, 1 recit. Prereq: Chem 122 and Math 152; or equivs.

**720\* Noble Gas Geochemistry U G 4**

Application of noble gas, K-Ar, and  $^{40}\text{Ar}/^{39}\text{Ar}$  research methods to geological and geochemical problems. Foland.

Sp Qtr. 4 cl. Prereq: 620 or equiv, or written permission of instructor.

**725\* Isotope Geochemistry of Igneous and Metamorphic Systems U G 4**

Advanced study of the principles, methods, and applications of isotope geochemistry to igneous and metamorphic processes and the origin and evolution of the Earth. Foland.

Sp Qtr. 4 cl. Prereq: 620 or equiv or written permission of instructor, 625 recommended.

**737\* Crystal Structure Analysis U G 4**

Theory and practice of single crystal X-ray and elastic neutron diffraction, including four-circle diffractometry, profile analysis, data reduction, and least-squares structure refinement. Downs.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: Math 153 and Physics 113 or 133; or equivs.

**746\* Rheological Properties of Rocks U G 3**

Principles of rock rheology and empirical studies of brittle and ductile deformation mechanisms, with special reference to applications to crustal and mantle problems. Whillans and Wilson.

Sp Qtr. 3 cl. Prereq: 530.

**751\* Quantitative Ground-Water Flow Modeling U G 5**

Principles of analytical and numerical techniques in modeling ground-water flow in porous media, use of two- and three-dimensional steady-state and transient flow codes. Bair.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 651; and En Graph 200, or 641 and previous FORTRAN training.

**752\* Contaminant Hydrogeology U G 5**

Fate and transport of contaminants in the subsurface; methods used to characterize, evaluate, and remediate sites contaminated by hazardous wastes and pollutants. Schwartz.

Wi Qtr. 4 cl, 1 2-hr lab, 2 all-day field trips. Prereq: 651; and En Graph 200, or 641 and previous FORTRAN training.

**779\* Physical Properties of Minerals and Rocks U G 3**

Quantitative survey of electrical, magnetic, elastic, inelastic, radioactive, thermal, density, and seismic properties and chemical compositions of rocks and minerals. Nollmeyer.

Wi Qtr. 3 cl. Prereq: 221, 600, and 617; or equivs; or written permission of instructor.

**781\* Gravimetry U G 3**

Analytical treatment of concepts and methods of gravimetry; introductory theory of gravitational potential; geological interpretation of gravity data. Nollmeyer and von Frese.

Au Qtr. 3 cl. Prereq: 681 or written permission of instructor. Not open to students with credit for 643.

**782\* Magnetometry U G 3**

Advanced magnetic theory and practice applied to investigations of the subsurface, including interpretation of surface, airborne, and satellite magnetic measurements. von Frese.

Au Qtr. 3 cl. Prereq: 681 or written permission of instructor.

**H783 Honors Research U 3-5**

A program of individual study arranged for students enrolled in the honors program, with individual conferences and reports; requires presentation and oral defense of an honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the geol sci courses taken and an average of at least B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA or BS *with distinction* in geol sci. Failure to receive the mark of S in this course is a disqualification for departmental honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**784\* Paleomagnetism U G 3**

Physical and mineralogical basis for permanent magnetization in rocks, physical basis of measurement, geological basis for sampling, and geological constraints on interpretation of results. Nollmeyer.

Sp Qtr. 3 cl. Prereq: 680 or equiv or written permission of instructor.

**800 Seminar in Stratigraphy G 3**

Consideration of current and classical problems and procedures in biostratigraphic and lithostratigraphic analysis and synthesis. Ausich, Bergstrom, Collinson, and Krissek.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**801 Seminar in Sedimentation and Sedimentary Rocks G 3**

Consideration of sedimentation, and the structures, petrography, depositional environments, and paleontologic interpretation of sedimentary rocks. Ausich, Collinson, James, and Krissek.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**810 Seminar in Paleobiology G 3**

Advanced topics in paleozoologic and paleobotanic morphology, taxonomy, and procedure; current questions in biostratigraphy, paleoecology, and evolutionary development of fossil floras and faunas. Ausich, Babcock, Bergstrom, and Webb.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**821 Seminar in Isotope Geology and Geochemistry G 3**

Discussion of selected topics in isotope geology, geochronology, geochemistry, and cosmochemistry. Faure and Foland.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**822 Seminar in Petrology and Optical Mineralogy G 3**

Selected topics in optical mineralogy and igneous, sedimentary, and metamorphic petrology. Barton, Downs, and Elliot.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**840 Seminar in Structural Geology G 3**

Selected topics in structural geology, rock deformation, and geotectonics. Wilson.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**850 Seminar in Geomorphology and Quaternary Geology G 3**

Current and classical problems in geomorphology and Quaternary geology, such as desert and coastal geomorphology, submarine topography, periglacial and karst morphology, volcanology, and Quaternary geochronology. McKenzie, Thompson, and Whillans.

Au, Wi Qtrs. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**851 Seminar in Hydrogeology and Oceanography G 3**

Topics in hydrogeology and oceanography, such as ground-water hydrology and hydraulics, basin management, reef and atoll development, or paleo-oceanography. Bair, Chin, Krissek, and Schwartz.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**860 Seminar in Mineral Deposits and Fossil Fuels G 3**

Study of selected deposits of metallic minerals, industrial rocks, and minerals, or fossil fuels. Faure and Pride.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**874 Seminar in the History of the Geological Sciences G 3**

Discussion of the development of the geological sciences, intended to give the student a firm basis for comprehension of the sciences as they exist today. James, Mayer, and McKenzie.

Wi Qtr. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**880 Seminar in Geophysics G 3**

Investigation and discussion of recent developments in geophysics, including exploration geophysics, glaciology, solid-earth geophysics, paleomagnetism, tectonics, or engineering evaluation. Daniels, Nollmeyer, von Frese, and Whillans.

Sp Qtr. 2 2-hr cl. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs.

**888 Colloquium in the Geological Sciences G 1**

Discussion of current research in the geological sciences.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in geol sci. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**896 Interdepartmental Seminar in Polar and Alpine Studies G 1-3**

A seminar on selected topics involving anthropology, biology, climatology, exploration, geology, glaciology, microbiology, and soils. Jezek.

Sp Qtr. 1-3 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. Given cooperatively by the Byrd Polar Research Center, the College of Biological Sciences, and the departments of Geography, Geological Sciences, Plant Biology, and Zoology.

**999 Research in the Geological Sciences G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## German

314 Cunz Hall, 1841 Millikin Road, 292-6985

### Placement and Proficiency Examinations

*In order to insure proper registration, placement tests are required of all students who continue their study of German in the dept after beginning their language in high school. Such tests are given during Summer Orientation and daily Monday-Friday each quarter. Consult the College of Humanities section of the Colleges of the Arts and Sciences Bulletin or the dept.*

*Students who are given advanced standing in the dept as a result of the placement and proficiency examination become eligible for University credit.*

### Excess Entrance Credits in German

*Freshmen who have excess credits in a foreign language are eligible for examination for advanced standing. The examination is given at the same time as the placement tests mentioned above.*

*Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 (including the decimal subdivisions such as 101.51, etc.) and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.*

**101 Elementary German I**

Development of aural comprehension, speaking, reading, and writing skills. Open to students with no prior instruction in German and to those with a maximum of one year of high school German and a placement test score from 0-10. Not open to students with credit for 100.01 or 100.02, or to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of study in this language in high school, except by permission of dept. GEC/LAR courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Su, Au, Wi, Sp Qtrs. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**101.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs in 101.02.

**102 Elementary German II**

Development of aural comprehension, speaking, reading, and writing skills. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 100.02, or 101.01, or 5 cr hrs in 101.51 or 101.02. Also open to students with a maximum of two years of high German and a placement test score from 11-21. This course is available for EM credit.

**102.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: 100.02, or grade of B- or above in 101.01, or 5 cr hrs in 101.02 or 101.51, or permission of instructor. Also open to students with a maximum of two years of high German and a placement test score from 11-21. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs in 102.02.

**102.66 Intensive German for Review I U 5**

Review of basic structures, vocabulary, and skills needed for entry into German 103.01.

Au Qtr. 3 1½-hr cl. Prereq: 2 or more years of high school German and placement test score of 0-10. Not open to native speakers of German through regular enrollment or EM credit. Not open to students with credit for 101.01, 101.51, 102.01, 102.51. Students who test into 102.66 during Wi or Sp Qtr may audit 101.01.

**103 Intermediate German I**

Reading; oral and written practice; grammar review; students may select from among the following subdivisions which emphasize specific skills and subject matter.

Su, Au, Wi, Sp Qtrs. (Not all decimal subdivisions offered every qtr.) 5 cl. Prereq: 102.01, or 5 cr hrs in 102.51, or 102.02, 102.66, or 110, or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

**103.01 Basic U 5**

Balanced use of the basic language skills: reading, aural comprehension, speaking, and writing.

H103.01 (honors) may be available to students in an honors program or by permission of instructor. Prereq for H103.01: 102.01 with a grade of A or permission of instructor. Not open to students with credit for 103. This course is available for EM credit.

**103.05 Science U 5**

Introductory readings in scientific German.

Not open to students with credit for 103 or 113.

**103.51 Individualized Track U 1-5**

Prereq: 102.01, or 5 cr hrs in 102.51, or 110, or equiv. Not open to students with credit for any decimal subdivision of 103. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

**103.66 Intensive German for Review II U 5**

Intensive review of basic structures, vocabulary and skills needed for entry into German 104.

Au, Wi Qtrs. 3 1½-hr cl. Prereq: 3 or more years of high school German and placement test score of 11-21. Not open to native speakers of German through regular enrollment or EM credit. Not open to students with credit for German 102.01, 102.51, 102R, 103.01, 103.51. Students who test into 103.66 during Sp Qtr may audit 102.01.

**104 Intermediate German II U 5**

Reading; oral and written practice; vocabulary building; students may select from among the following subdivisions which emphasize specific skills and subject matter.

Su, Au, Wi, Sp Qtrs. (Not all decimal subdivisions offered every qtr.) 5 cl. Prereq: 103 or 112. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

**104.01 Basic**

Balanced use of the basic language skills: reading, aural comprehension, speaking, and writing.

H104.01 (honors) may be available to students in an honors program or by permission of instructor. Prereq for H104.01: H103.01 or 103.01 with a grade of A or permission of instructor. Not open to students with credit for 104. This course is available for EM credit.

**104.02 Conversation**

Emphasis on speaking and aural comprehension.

Not open to students with credit for 104.

**104.03 Readings in the Humanities**

Emphasis on readings in German literature, cultural history, and contemporary life.

Not open to students with credit for 104.

**104.05 Science**

Advanced readings in scientific German.

Not open to students with credit for 104 or 114.

**104.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 103.01 or 5 cr hrs in 103.51. Not open to students with credit for any decimal subdivision of 104. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from 1 cr hr to the next with proficiency at the level of 80% required for advancement.

**112+ Intensive German U 5, 10, or 15**

Elementary and intermediate German for students desiring comprehensive knowledge of German in the shortest possible time; students will devote their entire time to this course.

Su Qtr. Enrollment limited to 20 students. Prereq: Permission of dept. Not open to native speakers of this language through regular course enrollment or EM credit. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, and 103. Students may not register for any other course if they enroll in 112. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in German will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. No audit. GEC/LAR course. FL Admis Cond course.

**162+ Elementary-Intermediate German for Selected Students U 5**

Wi Qtr. 5 cl. Prereq: Grade of A in 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course.

**163+ Elementary-Intermediate German for Selected Students U 5**

Continuation of 162.

Sp Qtr. 5 cl. Prereq: 162. Not open to native speakers of this language through regular course enrollment or EM credit. Successful completion of the sequence 101-162-163 fulfills the Arts and Sciences foreign language requirement and provides eligibility for 200-level courses. GEC/LAR course.

**201 German Composition and Conversation U 5**

Practice in basic written and spoken German; emphasis on study of word forms and sentence structure; themes and oral presentations on topics of everyday life.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 104 or equiv. Not open to students with credit for 204 or 205; or to native speakers of this language through regular course enrollment or EM credit. No audit.

**202+ Business German I U 3**

Four-skill study and practice of general business German; introduction to current German commerce, business practices, terminology, business-related communication skills.

Wi Qtr. 3 cl. Prereq: 201 or equiv, or permission of instructor. No audit.

**203+ Intermediate German Conversation U 3**

Practice in spoken everyday idiomatic German, based on texts concerning German life today.

Wi, Sp Qtrs. 3 cl. Prereq: 104.02, any other 104 course, or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. No audit.

**230 Introduction to German Prose U 5**

Reading and discussion of German literary texts representing significant prose types, authors, and periods including fairytale, fable, diary, short story, novella, essay, and novel.

Au Qtr. 5 cl. Prereq: 104 or equiv or permission of instructor.

**231+ Introduction to German Poetry U 5**

Reading and discussion of selected German poetry, introducing major German poets and poetic forms; these include the folksong, ballad, sonnet, and religious and political poetry.

Wi Qtr. 5 cl. Prereq: 104 or equiv or permission of instructor.

**232 Introduction to German Drama U 5**

Reading and discussion of German dramatic texts, representing influential forms, authors, and traditions: folk comedy, classical tragedy, the tragicomedy, the radio play, and documentary theatre.

Wi Qtr. 5 cl. Prereq: 104 or equiv or permission of instructor.

**260\* German Literature U 5**

Trends in German literature of the Middle Ages, the Renaissance and the Reformation as reflected in representative literary monuments.

3 1½-hr cl. Prereq: English 110 or 111 or equiv. Credit does not apply toward a major in German. Taught in English. BER/GEC/LAR courses.

**260.01 Love, Death, and Folly in German Literature before 1700**

Major works of German literature of the Middle Ages, the Renaissance, and the Baroque, in English translation.

Au Qtr. Not open to students with credit for 260.

**260.02 The Family: German Literature after 1700**

Major German literary, autobiographical texts from the 18th to the 20th centuries in English translation as well as films.

Sp Qtr.

**260.03 Ethics and Institutions: Soldiers and Bureaucrats**

Major works of modern German literature in English translation, with a theme by which significant developments in German culture can be measured and examined.

Wi Qtr.

**261+\* German Classics in Translation U 3**

Social and intellectual forces in Germany as reflected in German literature from the Enlightenment to the middle of the 19th century; masterpieces from Goethe to Gottfried Keller.

Wi Qtr. 3 cl. Credit does not apply toward a major in German. Taught in English. BER/LAC course.

**262+\* Modern German Literature in Translation U 3**

Intellectual forces and literary trends in German literature from the end of the 19th century to the present; masterpieces from Gerhart Hauptmann to Bertolt Brecht.

Sp Qtr. 3 cl. Credit does not apply toward a major in German. Taught in English. BER/LAC course.

**H263 The Faust Theme U 5**

Major versions of the Faust story, their socio-cultural context, and their symbolic expression of recurring human concerns.

Au Qtr. 2½-hr cl. Prereq: English 110 or 111 or equiv. Taught in English. BER/GEC/LAR course.

**291 Early German Literature in Cultural Context U 5**

Origins and highlights of German culture and life as reflected in literary and poetic works, Germanic mythology, religion, and the arts.

Au Qtr. 5 cl. Not open to students with credit for 361. Taught in English. Supplemented by audio-visual aids. BER/GEC/LAR course.

**292 Modern German Literature in Cultural Context U 5**

Two hundred years of German literature, arts, philosophy, and social thought, as they reflect cultural and social life in German-speaking countries.

Wi Qtr. 5 cl. Not open to students with credit for 362. Taught in English. Supplemented by audio-visual aids. BER/GEC/LAR course.

**293 Individual Studies U 2-5**

Individual investigation of minor problems in German language and literature.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of chairperson. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

**294 Group Studies U 2-5**

Investigation of minor problems in German literature and language.

Au, Wi, Sp Qtrs. Prereq: Written permission of chairperson. Repeatable to a maximum of 10 or hrs.

**298\* Study Tour U 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**298.01 Domestic****298.02 Foreign****299 Weimar and Fascism in German Literature and Film U 5**

Culture of the Weimar Republic and Nazi Germany in literature, film, the other arts; the roots of fascism and its echoes in postwar Germany.

Au, Sp Qtrs. 2 2-hr cl. Taught in English. BER/GEC/LAR course.

**301 Intermediate German Composition and Conversation U 5**

Practice in written and spoken German; emphasis on semantics, topical area studies, word families; essays and oral presentations on topics of general interest and current concern.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 201 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. No audit.

**302+\* Business German II U 3**

Four-skill study and practice of general business German; introduction to current German commerce, business practices, terminology, and business-related communication skills.

Sp Qtr. 3 cl. Prereq: 202 or equiv or permission of instructor. No audit.

**303+ The Practice of Translation U 3**

German-English and English-German translation; texts from diverse areas; emphasis on improvement of German grammar, syntax, idiom, and style; discussion of common translation techniques.

Wi Qtr. 3 cl. Prereq: 201 or equiv or permission of instructor. No audit.

**399 The Holocaust Experience in German Literature and Culture U 5**

Literary texts and films reflecting the German Jewish literary tradition, German anti-Semitism, and the Holocaust; authors include Luther, Heine, Zweig, Celan, and Arendt.

Wi Qtr. 2 1½-hr cl. Taught in English.

**409\* Advanced German Conversation U 3**

Practice in spoken German on topics of general interest and current events.

Au Qtr. 3 cl. Prereq: 301 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

**410 Advanced German Composition U 3**

Writing and discussion of compositions, practical review of grammar in context, and practice in translation.

Au, Wi Qtrs. 3 cl. Prereq: 301 or equiv or permission of instructor. Not open to students with credit for 630.

**420+ Studies in German Literature I (750-1700) U 5**

Development of German literature in its historical, social, and philosophical context from earliest times to the Age of Enlightenment.

Sp Qtr. 5 cl. Prereq: 201 or equiv, and one German literature course; or permission of instructor. Taught in German.

**421 Studies in German Literature II (1700-1870) U 5**

Development of German literature in its historical, social, and philosophical context from the Age of Enlightenment to German unification.

Wi Qtr. 5 cl. Prereq: 201 or equiv, and one German literature course; or permission of instructor.

**422\* Studies in German Literature III (1870-Present) U 5**

Development of German literature in its historical, social, and philosophical context from 1870 to the present.

Sp Qtr. 5 cl. Prereq: 201 or equiv, and one German literature course; or permission of instructor.

**463 German Culture of the 19th and 20th Centuries U 5**

Intellectual, artistic, and social trends in the German-speaking countries from 1815 to the present.

Sp Qtr. 5 cl. Prereq: 10 or hrs beyond 104 of courses taught in German or permission of instructor. Taught in German. BER/LAC course.

**499+ National Reconstruction: Culture in the Postwar Germanies U 5**

Presentation of a broad picture of cultural developments in the modern German states from the end of World War II to the present.

Sp Qtr. 2 2-hr cl. Prereq: Sr standing.

**540 Literature and Life in German-Speaking Countries U G 3**

Discussion of significant literary and cultural developments reflecting aspects of life in German-speaking countries: Austria, Switzerland, and Germany; topic varies.

Au Qtr. 3 cl. Prereq: 201, 301, and one German literature course; or permission of instructor. Repeatable to a maximum of 9 or hrs. GEC/LAR course. Taught in German.

**550 Current Events in German-Speaking Countries U G 3**

Studies and intensive discussion of current cultural and social issues in the German-speaking world; newspaper readings, guest lectures, films, music and student presentations; topic varies.

Sp Qtr. 3 cl. Prereq: 10 or hrs of German at the 200 level and 301 or equiv, or permission of instructor. Repeatable to a maximum of 9 or hrs. Taught in German.

**560 Senior Seminar in German Literature U 3**

Intensive study and discussion of selected important issues, themes, trends, or individual authors; topic varies.

Sp Qtr. 3 cl. Prereq: 201, 301, and one 400-level German literature course, or permission of instructor. Repeatable to a maximum of 9 or hrs. Taught in German.

**571 Basic German for Graduate Students G 5**

The fundamentals of German grammar, as required for the reading of German texts in the sciences, social sciences, and humanities.

Su, Au, Wi Qtrs. 5 cl. Prereq: Grad standing. Credit does not apply to the minimum hours required for the master's or doctoral degrees. No audit.

**572 German for Research I G 3**

Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement.

Su, Au, Wi Qtrs. 3 cl. Prereq: Grade of C or above in 571 or equiv preparation demonstrated by a placement test. Open only to grad students. Credit does not apply to the minimum hours required for the master's or doctoral degrees. No audit. Repeatable twice.

**573 German for Research II G 3**

Reading of difficult material at a reasonable rate of speed and with only infrequent use of dictionaries. Completion of this course with a grade of A or B may be accepted by the student's dept as evidence of a thorough reading knowledge of German.

Su, Wi Qtrs. 3 cl. Prereq: Grade of A or B in 572, or equiv preparation demonstrated by a placement test and permission of instructor. Open only to grad students. Credit does not apply to the minimum hours required for the master's or doctoral degrees. No audit. Repeatable twice.

**General Prerequisites for Courses Numbered 600**

Unless otherwise indicated, the prerequisites for all 600-level courses are: 201, 301, 410, and one German literature course at the 400 level (420, 421, 422). Exceptions may be allowed by instructors for students with special qualifications.

**630 Introduction to Stylistics U G 5**

Composition on assigned topics, intensive translation, and comparative study of usage designed to develop a sophisticated expository style in the writing of German.

Wi Qtr. 4 cl. Prereq: 410, or 301 and written permission of instructor.

**635+ Practical German Pronunciation U G 5**

Standard German pronunciation; oral and written drill.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**641+ Language and Society in Interwar Vienna U G 5**

Interwar Viennese social and political structure, language and literary expression, ethnic diversity; arts and architecture; gender politics; transition of empire to republic; roots of Austro-fascism and anti-Semitism.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: Jr standing or permission of instructor. Not open to students with credit for Yiddish 641. Cross-listed in Yiddish.

**660+ Masterpieces of German Literature U G 5**

Selections from works of major German writers; topic varies each year.

Su Qtr. 4 cl. Prereq: Permission of chairperson. Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies U G 2-5**

Investigation of minor problems in the various fields of German literature and philology.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-15**

Investigation of minor problems in the various fields of German literature and philology.

Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**General Prerequisites for Courses Numbered 700**

Prerequisites for 700-level courses are grad standing, or 4th yr standing with 10 cr hrs in German at the 600-level, and permission of chairperson.

**701+ Introduction to Bibliography and the Tools of Research U G 3**

The tools, problems, and methods of literary, philological, linguistic, electronic, and pedagogical research in Germanics.

Au Qtr. 2 cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 800.

**702+ Introduction to Literary Forms and Styles U G 5**

History of literary genres, their textual forms, their theories; the terminology of genre, literary structures, and devices and practice in analysis of various texts.

Wi Qtr. 2 cl. Prereq: Grad standing or permission of instructor.

**703+ Introduction to Contemporary Critical Approaches to Literature U G 3**

Primary current methodological and theoretical approaches to German literary study and brief consideration of their history: positivism, hermeneutics, formalism, Marxism, structuralism, post-structuralism.

Wi Qtr. 2 cl. Prereq: Grad standing or permission of instructor.

**705 Structure and Description of Modern Standard German U G 5**

Phonological, morphological, and syntactic systems of modern German; lexical changes, non-standard varieties of the language; differences between East and West German usage.

Wi Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Taught in German.

**706+ Forms of Contemporary German Usage U G 5**

Analytical and practical study of the ways in which German is written and spoken today (colloquial speech, business and scholarly German, etc.); emphasis on oral and written practice.

Sp Qtr. 4 cl. Prereq: Grad standing or permission of instructor or 409 and 410 or 630. Taught in German.

**740 Development of German Narrative Prose U G 5**

The novel, *Novelle*, short story, and other forms of German prose: historical overview, theory, and selected primary texts as illustration.

Sp Qtr. 4 cl. Prereq: Grad standing or equiv or permission of instructor.

**741+ Development of German Drama U G 5**

History and theory of the drama in Germany; methods of drama analysis; interrelationship of drama, theatre, and audience; study of selected texts.

Au Qtr. 4 cl. Prereq: Grad standing or permission of instructor.

**742 Development of German Poetry U G 5**

Elements of German poetry; close study of representative poets and poems since the Baroque.

Au Qtr. 4 cl. Prereq: Grad standing or permission of instructor.

**750+ Periods of German Literary History: 800-1400 U G 5**

Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.

Wi Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**751+ Periods of German Literary History: 1400-1700 U G 5**

Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.

Au Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**752 Periods of German Literary History: 1700-1850 U G 5**

Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.

Au Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**753 Periods of German Literary History: 1850-Present U G 5**

Study of major works chosen to present prominent themes and problems within the period; topic varies.

Sp Qtr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**777 Colloquium in German Literature U G 2-5**

Selected topics, problems, and works in the various fields of German literature.

Au Qtr. Arr. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**H783 Honors Research U 3-5**

Offers undergraduates with special aptitudes a greater opportunity for independent study than is possible in ordinary courses.

Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the German courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**790+ Foundations of Contemporary Critical Theory U G 5**

Interdisciplinary survey of the theoretical bases of the major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.

Wi Qtr. 2 2-hr or 5 cl. Prereq: Jr or sr or grad standing. Cross-listed in Comparative Studies in the Humanities, English, French, Italian, and Spanish.

**792†\* Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of instructor.

**General Prerequisites for Courses Numbered 800**

*Prerequisites for 800-level courses are graduate standing and permission of chairperson.*

**801†\* Middle High German G 5**

Intensive introduction to Middle High German; comprehension and application of grammatical principles; selected texts for linguistic analysis.

Au Qtr. 4 cl.

**802†\* Old Saxon and Old High German G 5**

Analysis of the structure of Old High German and Old Saxon and dialect differences, manuscript tradition, textual criticism, literary-cultural importance of major works.

Wi Qtr. 4 cl.

**803†\* Gothic G 5**

Phonology and grammar of Gothic as a German dialect; selected passages from Wulfila's Bible; relationship of the Germanic languages to Old High German.

Sp Qtr. 4 cl.

**806\* History of the German Language G 5**

Basic concepts of historical linguistics; the major factors of change in the history of German from Proto-Germanic to the present.

Au Qtr. 4 cl. Prereq: 801.

**810\* German Literary Criticism and Theory G 5**

Historical overview and evaluation of critical methods; introduction to contemporary literary theories; the use-value of literary criticism.

Wi Qtr. 2 2-hr cl.

**840 College Teaching of German G 5**

Methods and techniques for teaching German at the college level.

Au Qtr. 4 cl. Prereq: Permission of instructor. Intended for grad students in German. Not open to students with credit for 700.

**850 German Proseminar G 5**

Selected topics in German literature, language, and culture; seminar discussion format with oral and written reports.

Au, Wi, Sp Qtrs. 4 cl. Repeatable to a maximum of 20 cr hrs.

**890† Interdepartmental Studies in Critical Theory G 5**

Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.,) in literary theory.

Sp Qtr. 2 2-hr or 5 cl. Prereq: Background in critical theory recommended. Repeatable to a maximum of 10 cr hrs. Cross-listed in Comparative Studies in the Humanities, English, French, Spanish, and Women's Studies.

**899† Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

**960 Seminar in Modern German Literature: 1700 to the Present G 5**

Topics vary in focus and methodology; emphasis may range from individual authors, works, or themes to theoretical or interdisciplinary issues; major research papers.

Au, Wi, Sp Qtrs. 1 3-hr cl. Repeatable to a maximum of 45 cr hrs.

**970† Seminar in Older German Literature to 1700 G 5**

Topics vary in focus and methodology; emphasis may range from individual authors, works, or themes to theoretical or interdisciplinary issues.

Sp Qtr. 1 3-hr cl. Repeatable to a maximum of 45 cr hrs.

**980†\* Seminar in Germanic Philology G 5**

Topics from historical and comparative studies of older Germanic dialects; structure of New High German and contemporary German.

Wi Qtr. 1-3-hr cl. Not open to students with credit for 870. Repeatable to a maximum of 45 cr hrs.

**993 Individual Studies G 1-5**

With the approval of the department chairperson, doctoral students may register for individual study in areas normally not covered by courses.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research in German: Thesis G Arr**

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**999 Research in German: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Graduate School

247 University Hall, 230 North Oval Mall, 292-6031

**999 Research: Interdisciplinary G Arr**

Thesis or dissertation research approved by the Graduate School in one-of-a-kind programs.

## Greek

414 University Hall, 230 North Oval Mall, 292-2744

See also Classics.

**101 Elementary Ancient Greek I U 5**

Introduction to the language of the ancient Greek authors and the New Testament.

Au Qtr. 5 cl. Not open to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

**102 Elementary Ancient Greek II U 5**

Wi Qtr. 5 cl. Prereq: 101. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

**103 Intermediate Ancient Greek I U 5**

Sp Qtr. 5 cl. Prereq: 102. This course is available for EM credit. GEC/LAR course.

**104 Intermediate Ancient Greek II U 5**

Au Qtr. 5 cl. Prereq: 103 or permission of instructor. This course is available for EM credit. GEC/LAR course.

**210† The Greek New Testament U 5**

Wi Qtr. 5 cl. Prereq: 104 or permission of instructor.

**221 Attic Prose U 5**

Au Qtr. 5 cl. Prereq: 104. BER/LAC course.

**222 Euripides U 5**

Wi Qtr. 5 cl. Prereq: 104 or permission of instructor. BER/LAC course.

**223† Homer U 5**

Sp Qtr. 5 cl. Prereq: 104 or permission of instructor. BER/LAC course.

**224 The Greek Historians U 5**

Sp Qtr. 5 cl. Prereq: 104. BER/LAC course.

**225† Sophocles U 5**

5 cl. Prereq: 104 or permission of instructor. BER/LAC course.

**293 Individual Studies U 1-3**

Intermediate readings in Greek literature.

Su, Au, Wi, Sp Qtrs. Prereq: 104 or equiv or written permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**604 Herodotus U G 5**

2 2-hr cl. Prereq: 2 courses at 200 level.

**605 Euripides U G 5**

2 2-hr cl. Prereq: 2 courses at 200 level.

**606† Sophocles U G 5**

5 cl. Prereq: 2 courses at 200 level.

**607† Homer U G 5**

Readings from the *Odyssey*.

Au Qtr. 5 cl. Prereq: 2 courses at 200 level.

**608† Readings from Attic Prose U G 5**

Readings from the Attic Orators or Xenophon or Thucydides.

Sp Qtr. 2 2-hr cl. Prereq: 2 courses at the 200 level.

**608.01 The Orators****608.02 The Historians, Thucydides, and Xenophon**

**609 Readings in Plato U G 5**

5 cl. Prereq: 2 courses at 200 level.

**612\* Attic Prose Composition U G 5**

Review of elementary syntax leading to composition of sentences and short connected passages; concurrent readings from Lysias or Xenophon.

3 cl, 2 hr arr. Prereq: At least 1 course at 600 level.

**660 Special Topics in Greek Literature U G 5**

Extensive reading from masterpieces of Greek literature; topic varies.

Wi Qtr. 2 2-hr cl. Prereq: Two courses at the 200 level. Repeatable to a maximum of 20 cr hrs.

**693 Individual Studies U G 1-6**

Passages for reading and topics for investigation will be selected to meet the needs of individual students.

Su, Au, Wi, Sp Qtrs. Prereq: 2 courses at 600 level, or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-6**

Au, Sp Qtrs. Prereq: 4 courses more advanced than 104, or permission of chairperson. Repeatable to a maximum of 20 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701\* Survey of Greek Literature: Epic/Archaic Eras U G 5**

A survey of authors representative of the earliest period of Greek literature, with discussion of historical background and methods of criticism.

Au Qtr. 2 2-hr cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 601.

**702\* Survey of Greek Literature: Classical Age U G 5**

A survey of authors representative of the Classical period of Greek literature, with discussion of historical background and methods of criticism.

Wi Qtr. 2 2-hr cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 602.

**703\* Survey of Greek Literature: Hellenistic Era U G 5**

A survey of authors representative of the Hellenistic period of Greek literature, with discussion of historical background and methods of criticism.

Sp Qtr. 2 2-hr cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 603.

**H783 Honors Research U 3-5**

A program of study arranged for each student with individual conferences, reports, and an honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the Greek courses taken and with an average of B in the remainder; written permission of instructor under whose supervision the work is to be completed and the ASC Honors Committee; at least 2 qtrs are required of candidates for the degree BA *with distinction* in Greek. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**General Prerequisites for Courses Numbered 800 and Above**

*Prerequisites for admission to courses numbered 800 and above are graduate standing and permission of the chairperson.*

**802\* Advanced Greek Prose Composition G 5**

Weekly exercises in continuous prose composition with concurrent readings from Greek prose authors.

Wi Qtr. 2 cl, tutorial arr. Prereq: 612 or permission of instructor.

**813† Studies in the Greek Orators G 5**

Selected topics in Greek oratory: Lysias, Andocides, Isocrates, or Demosthenes.

2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**818 Studies in the Greek Historians G 5**

Selected topics in Greek historiography: Herodotus, Thucydides, Xenophon, or Polybius.

2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**836† Studies in Hellenistic Literature G 5**

Critical study of Greek authors of the third to first centuries B.C.

Repeatable to a maximum of 10 cr hrs.

**840 Studies in Greek Drama G 5**

Critical study of one or more of the Greek dramatists: Aeschylus, Sophocles, Euripides, Aristophanes, and Menander.

2 2-hr cl. Repeatable to a maximum of 20 cr hrs.

**842† Studies in Greek Lyric and Elegiac Poetry G 5**

Selected topics in the lyric and elegiac poets of the seventh through fifth centuries B.C.

Au Qtr. 1 3-hr cl. Repeatable to a maximum of 15 cr hrs.

**844 Studies in the Greek Philosophers G 5**

Selected topics in Greek philosophy: the pre-Socratics, Plato, Aristotle, and the Hellenistic philosophers.

Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**845 Studies in Greek Epic G 5**

Selected topics in Greek epic: Homer, Hesiod, or Apollonius.

1 3-hr cl. Repeatable to a maximum of 20 cr hrs.

**894 Group Studies G 1-6**

Repeatable to a maximum of 20 cr hrs.

**993 Individual Studies G 1-4**

Assigned readings; individual research in disciplines such as epigraphy, topography, papyrology, linguistics, etc.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**995 Seminar G 5**

The seminar completes a two-qtr sequence (Au/Wi, Wi/Sp) begun with an 800-level intensive study of an author or a genre, e.g., Aeschylus, Thucydides, Hellenistic poetry.

Wi Qtr. Repeatable to a maximum of 20 cr hrs.

**999 Research G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Hausa

486 University Hall, 230 North Oval Mall, 292-3700

**101 Elementary Hausa I U 5**

Introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR course. FL Admis Cond course.

**102 Elementary Hausa II U 5**

Continuation of 101; introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

**103 Intermediate Hausa I U 5**

Continuation of 102; introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.

Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

**104 Intermediate Hausa II U 5**

Continuation of 103; introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.

Su, Au Qtrs. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

## Health Education

School of Health, Physical Education, and Recreation

215 Pomerene Hall, 1760 Neil Avenue, 292-6116

**101 Special Topics in Health and Survival U 1**

Concentrated courses on specific health-related topics of interest and concern to students for survival and life-planning.

Arr. Repeatable (according to topic) to 10 cr hrs. Concurrent courses allowed; not a substitute for 103 or 200. This course is graded S/U.

**102 First Aid U 2**

A consideration of first aid practices to the injured; designed to lead to Red Cross certification in first aid.

2 hrs arr lab.



**103 Health and Well-Being in American Society U 3**

A study of student health problems; designed to foster understandings and attitudes needed for intelligent decision-making related to present and future health needs.

3 hrs arr. Not open to students with credit for 200.

**122 Techniques in Cardiopulmonary Resuscitation U 1**

Development of skills and competency in recognizing and reacting to situations requiring cardiopulmonary resuscitation measures; completion leads to certification in CPR by American Red Cross.

1 cl. This course is graded S/U.

**150 How to Avoid Dying from Cancer Now and Later U 2**

Discussion of the latest findings on avoiding cancer through lifestyle choices and assessment of one's family health history.

1 2-hr cl.

**200 Health and Behavior U 5**

Designed to establish a basis for positive health and efficiency through a consideration of various conditions and factors which affect health.

5 hrs arr. Not open to students with credit for 103. Open only to students in dent hyg ed, hlth edu, phys ed, and rec educ curricula, or by written permission of instructor.

**201 Current Concepts in Community Health U 3**

A study of community health programs, the need for them, the problems and issues involved, and how these problems can be solved.

3 hrs arr.

**202 First Aid for Instructors U 2**

A review of standard first aid; improvement of competencies; and preparation for instructor's certificate of the American Red Cross.

1 2-hr cl. Prereq: 102 and Red Cross Certificate.

**204 Sexuality and Health U 3**

The study of sexuality as an aspect of the healthy individual; the demythologizing of sexual beliefs and behaviors; sexual behavior and attitudes in young adults.

3 hrs arr.

**212 Issues in Alcohol/Drug Use and Abuse U 3**

Provides an understanding of the dynamics of substance abuse.

1 2 1/2-hr cl.

**214 AIDS: What Every College Student Should Know U 3**

A review of the physiological, psychological, social, legal, and moral issues surrounding the disease AIDS with emphasis placed on responsible decision making about one's lifestyle.

1 2 1/2-hr cl.

**289 Seminar and Field Experience in Health Education U 2-5**

Professional service in a school or community agency and seminar to discuss and analyze constructive experiences.

For students in hlth edu curriculum. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

**300 Health Education for Elementary Teachers U 3**

The teacher's responsibility for health of school child; screening, referral, vision and hearing, nutritional problems, instructional programs, emergency care, and teacher's health.

3 hrs arr. Prereq: 103 and Ed-T&P 451; admission to EDU. Not open to undergrad minors or majors in phys ed or hlth edu.

**400 Basic Teaching Skills for Health Professionals U 3**

Health-related teaching skills; development of learning objectives, use of different media and teaching strategies such as lecture, group process, and tutorial method.

2 2-hr cl. Prereq: Enrollment in one of the health professions schools.

**401 Fundamentals of Epidemiology and Biostatistics U 3**

Introduction to factors affecting the distribution of health problems in populations and to disease causation.

3 cl. Prereq: 201 or permission of instructor.

**402 Safety Education U 3**

Study of epidemiology of accidents, development of preventive programs, and safety consciousness.

3 hrs arr.

**587 Student Teaching in Health Education U 3-15**

Observation, participation, and responsible teaching in a public school in the greater Columbus area; individual and group conferences or seminars.

Prereq: 4th yr standing. Repeatable to the required 15 cr hrs. For additional information, see the *College of Education Bulletin*. This course is graded S/U.

**602 Personal Health Promotion U G 3**

An advanced study of personal health promotion; extensive reading and reporting in selected health areas.

3 hrs arr. Prereq: 200 or grad standing.

**603 Current Progress in Disease Control U G 2**

Authorities in medicine and health sciences will interpret how current findings may affect disease prevention and control; newer knowledge of cancer, dental caries, etc., will be discussed.

2 hrs arr. Prereq: 4th yr grad standing in a health science area.

**604 Education for Human Sexuality U G 3**

Review of current information on health and sexuality for educators and school personnel; consideration of the sex education curriculum, teaching methods, materials, and controversial issues.

3 hrs arr. Prereq: 200, 622 or equiv, Sociol 330, or permission of instructor.

**605 Health Counseling U G 3**

To provide educators and counselors opportunity to develop skills and knowledge to advise students and clients confronted with personal health concerns.

3 hrs. arr. Prereq: 5 hrs of psych; admission to EDU.

**612 Alcohol and Drug Education U G 3**

The study and development of techniques and programs to prevent or reduce psycho-social problems associated with drug misuse.

1 3-hr cl or 2 2 1/2-hr cl. Prereq: 622 or permission of instructor.

**621 School Health Services U G 3**

Consideration of healthful school living and health services, including health appraisal, counseling, educational adjustments, communicable diseases, and emergency programs.

3 hrs arr. Prereq: 200 or equiv. For majors and minors in health sciences and health education.

**622 Teaching of Health U G 5**

Principles, methods, materials, and resources involved in teaching health; direct, correlated, and integrated curriculum patterns; individual teaching experience.

5 hrs ar. Prereq: 621. Not open to students with credit for 610.

**623 Health Agencies U G 5**

Health agencies: purposes, location, affiliations, sources of funding, staff responsibilities, volunteer opportunities, services, educational materials, and media, with emphasis on writing materials.

2 2 1/2-hr cl. Prereq: Health Education majors or permission of instructor. GEC course.

**650 Health Promotion in the Workplace U G 3**

Theoretical and pragmatic aspects of conducting health promotion programs in the workplace; discussion of rationale and relative effectiveness of various health components.

1 2 1/2-hr cl. Prereq: Sr standing or above.

**651 Health Program Planning U G 5**

Competency development in formulating and implementing health programs; includes understanding community organization and the health care system, administration, and sustaining programs.

2 2 1/2-hr cl. Prereq: 201 or permission of instructor.

**692 Workshop U G 1-8**

Intensive study of a health education topic of interest to the participants for the purpose of developing sound principles and practice relating to it.

Cl hrs arr. Prereq: Teaching experience or written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.

**693 Individual Studies U G 1-4**

Investigation of selected professional problems.

Prereq: 4th yr or grad standing and permission of adviser. A total of not more than 30 cr hrs of individual study (any 693) will apply toward graduation for undergrad students, 15 cr hrs for the master's degree and 30 cr hrs for the doctoral degree. This course is graded S/U.

**694 Group Studies in Health Education U G 1-5**

Group studies on special topics and proposed courses in health education.

3 hrs arr. Prereq: Advanced standing in professional hlth edu program or written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

Repeatable to a maximum of 9 cr hrs, including cr hrs in ED-F & R 700.01, 700.02, 700.03, and 700.04; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Cross-listed in Ed Policy & Leadership, Ed Theory & Practice, Human Services Ed, Physical Education and Recreation Education.

**700.01 Seminar on Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

**700.02 Changing Societal Values U G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.

**700.03 Seminar on Ethical Issues Common to the Helping Professions U G 3**

Ethical issues of concern to the professions and arising out of advanced technology; euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.

**700.04 Interprofessional Practicum in Clinical Settings U G 3, 5**

Interprofessional teamwork in clinical settings.

Prereq: Permission of instructor.

**700.05 Interprofessional Seminar in Policy Analysis U G 3**

Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.

3 cl. Prereq: Permission of instructor.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

**700.07 Interprofessional Approaches to Child Abuse and Neglect G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

1 2½-hr cl. Prereq: Permission of instructor. Limited to 12 students each in education, law, nursing, psychology, social work, allied medicine, medicine, and theology through Columbus Cluster.

**701 Comparative Study of World Health Problems U G 3**

A study of world health problems, their influences on all people, the variety and magnitude of problems, and the methods being used to solve them.

3 hrs arr. Prereq: 103, or equiv.

**702 Health After 60 U G 3**

Designed to develop an awareness of the health concerns of the elderly and a willingness to help improve their quality of life.

1 3-hr cl. Prereq: 4th yr standing in a health science or behavioral science area or permission of instructor.

**727 Special Topics in Education P G 1-5**

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Prereq: Grad standing or registration in one of the professional schools. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**788 Practicum for School Nurses U G 3-15**

A supervised opportunity is provided to practice the school nursing specialty in a public school health services setting.

1 conf per wk; hrs of field exp varies with cr hrs. Prereq: Written permission of area advisor. Limited to student nurses and RN's with courses required for school nurse certification. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**789 Practicum in Health Education U G 2-15**

Opportunity is provided for putting educational research and theory into practice by teaching, administration, and agency experience under supervision in university, school, and agency situations.

1 arr conf and arr field exp. Prereq: Written permission of instructor and departmental adviser based upon submitted evidence of appropriate knowledge and skill in the selected course. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**801 Professional Preparation of Health Educators G 3**

Review and development of standards, guidelines, and evaluation of programs preparing health educators; innovative and future expectations for the profession are explored.

3 hrs arr.

**802 Health Behavior Change in Adulthood and Later Years G 3**

Review of research on changing health behavior; includes smoking cessation, weight control, hypertension, stress, health promotion programs, and changing health behavior after 65.

1 2½-hr cl. Prereq: BS or BA degree in hlth edu or related field; advanced grad standing.

**819 Models of Health and Well-Being G 3**

Examines beliefs about health and explores models that depict ways in which the body, mind, and spirit work together to promote health and well-being.

1 cl.

**820 High Level Wellness G 3**

Analysis of the wellness movement, health risk appraisal, self-responsibility, psychoneuro-immunology, personal growth, wellness during death, and health in the 21st century.

1 2½-hr cl. Prereq: 819 or permission of instructor.

**821 Survey of Research in Health Education G 3**

Through study and review of research literature in health education, the professional in education will analyze and synthesize existing and needed areas and topics for research.

3 hrs arr. Prereq: MS or MA degree in hlth edu or allied field; advanced grad standing.

**822 Curriculum in Health Education G 3**

A review and study of concepts and practices in school health curricula and development of current and proposed curriculum models and designs.

3 hrs arr. Prereq: MSc or MA degree in hlth edu or allied field; advanced grad standing.

**823 Evaluation in Health Education G 3**

Identification and application of various techniques for evaluating, learning, processes, and programs in health education.

3 hrs arr. Prereq: MSc or MA degree in hlth edu or allied field; advanced grad standing.

**894 Group Studies in Health Education G 1-5**

Advanced studies in special problems and issues in health education.

**995 Seminar in Health Education G 3**

3 hrs arr. Prereq: Grad standing in hlth edu or health related profession, or permission of instructor. Repeatable to a maximum of 30 cr hrs.

A— Philosophical Perspectives on School Health Education

B— Philosophical Perspectives on Community Health Education

C— Health Education Issues in Patient Education

D— High-Level Wellness and Health Education

E— Moral and Ethical Issues in Health Education

F— International Perspectives of Health Education

G— Health Education and Related Health Manpower

H— Theories of Educational Technology in Health Education

I— Theories of Behavioral Change in Health Education

J— Administrative Issues in Health Education

K— Writing for the Health Professional

**999 Research G Arr**

Research for thesis and dissertation purposes only.

This course is graded S/U.

## Health Services Management and Policy

College of Medicine

543 School of Allied Medical Professions Building, 1583 Perry Street, 292-9708

**693 Individual Studies U G 1-5**

Study of individually designed topics not otherwise available in the curriculum.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Group studies of special topics within hospital and health services administration.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**795 Seminar U G 1-3**

Investigation of current topics of significance to health services management and policy.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**800 Health Care Organization I G 4**

Analysis of arrangements for the organization, financing, and delivery of health care services.

Au Qtr. 2 2-hr cl. Prereq: Written permission of instructor.

**801 Health Care Organization II G 4**

Continuation of 800, with emphasis on provider organizations and their roles.

Wi Qtr. 2 2-hr cl. Prereq: 800 or permission of instructor.

**802 Economic Analysis of Health Services G 4**

Applications of microeconomic analysis to the health services industry, with emphasis on the market structure and managerial decisions.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**805 Introduction to Health Policy G 4**

Introduction to public policy concepts and process as they apply to the organization, financing, and delivery of health services.

Sp Qtr. 2 2-hr cl. Prereq: 800 or permission of instructor.

**809 Field Study I: Health Organizations in the Community G 2**

Identification and survey of patterns of organization and control of health care institutions; analysis of nature and extent of interrelationships among institutions.

Au Qtr. Prereq: Permission of instructor. This course is graded S/U.

**810+ Field Study II: Departmental Management G 2**

Analysis of departmental and institutional objectives, management functions, interdepartmental relationships, and supervisory styles.

Sp Qtr. Arr cl, field study in health organizations. Prereq: Permission of instructor. This course is graded S/U.

**811 Legal Environment of Health Care G 4**

Law as it affects health care; malpractice, hospital-physician-patient relationships, legal issues in corporations, contracts, labor, antitrust, and decisions at the end of life.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**815 Health Services Organizational Management G 4**

Principles of organizational structure and behavior applied to health service organizations; emphasis on professionalism, governance, and unique problems of the health service setting.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**816 Human Resource Management in Health Care G 4**

Human resource management principles and applications in the health care setting, including interviewing, selection, training, conflict resolution, performance evaluation, and labor-management relations.

Sp Qtr. 2 2-hr cl. Prereq: 815 or BUS-MHR 806 or equiv.

**820 Health Services Finance I G 4**

Principles of finance and accounting applied to health service organizations.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**821 Health Services Finance II G 4**

Continuation of 820 emphasizing financial analysis, financial planning, and management control.

Sp Qtr. 2 2-hr cl. Prereq: 820 or permission of instructor.

**822 Health Services Financial Decision-Making G 4**

Principles of financial decision-making in health service organizations, with emphasis on applications of decision support systems.

Au Qtr. 2 2-hr cl. Prereq: HHSA 820 and 10 cr hrs of Acct&MIS.

**830 Forecasting Methods in Health Services Administration G 4**

Forecasting methods, with special emphasis on topics useful in health services administration, including service area determination, population forecasting, and non-historical methods.

Sp Qtr. 2 2-hr cl. Prereq: 6 cr hr of stat or permission of instructor.

**831 Strategic Planning and Program Development G 4**

Description of techniques and methods essential for strategic and project planning with an emphasis on social technical systems and health systems.

2 2-hr cl. Prereq: Permission of instructor.

**840 Long-Term Care Management and Policy G 4**

Provision of institutional and community-based care; management, financing, and regulation of long-term care services; and issues and approaches to reform.

Au Qtr. 2 2-hr cl.

**845 Managed Health Care Programs G 3**

Analysis of the organization, financing, and operation of managed health care programs.

Sp Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**850 Seminar in Health Service Management and Policy G 2-4**

Policy process and methods of decision making; assignment and solution of managerial problems; case studies, with emphasis on strategy and implementation.

Sp Qtr. 2 2-hr cl. Prereq: Enrollment in MHA or permission of instructor. Repeatable to a maximum of 4 cr hrs..

**855 Health Care Policy and Politics G 3**

Political characteristics of the policies and mechanisms for the provision of personal health services, with emphasis on community, state, and federal levels of policy-making.

AU Qtr. 1 3-hr cl.

**860+ Evaluation G 4**

Models of evaluation, including experimental designs, quasi-designs, and case studies with discussion of barriers to effective use of evaluation results in decision-making.

Wi Qtr. 3 1 1/2-hr cl. Prereq: Grad level course in stat or permission of instructor.

**861+ Managerial Decision Approaches G 4**

Decisions as made by individuals, groups, and organizations comprising the health delivery system; examination of decision-maker behavior; strategies to improve decisions.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**870 Advanced Studies in Hospital and Health Services Administration G 2-4**

Seminar in special topics in hospital and health services administration with content varying from quarter to quarter.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**880 Operations Management for Health Service Organizations G 4**

Concepts and techniques for managing operations in health service organizations; emphasis on management perspective and decision-making.

Sp Qtr. 2 2-hr cl. Prereq: Bus-Mgt 702 or equiv and Bus-Fin 720 or equiv.

**881 Topics in Health Services Operations Management G 4**

Selected topics in health services operations management, such as operations strategy, quality management, process design, materials management, and facility location.

Sp Qtr. Prereq: 880 or permission of instructor.

**998 Thesis Research G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Arr. This course is graded S/U.

## Hebrew

256 Cunz Hall, 1841 Millikin Road, 292-9255

**101 Elementary Hebrew I U 5**

Conversation, reading, writing, vocabulary building, phonetics, and grammar.

Su, Au, Wi, Sp Qtrs. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

**102 Elementary Hebrew II U 5**

Reading of modified passages from modern Hebrew literature supplemented with additional study of grammar.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

**103 Intermediate Hebrew I U 5**

Reading of passages from various periods of Hebrew literature; review of salient points of elementary grammar and introduction to elements of classical Hebrew.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 102 or 110. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

**104 Intermediate Hebrew II U 5**

Reading of modern Hebrew short stories, poems, and essays; special emphasis on oral practice and Hebrew idioms.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 103 or 112. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

**205 Modern Hebrew Grammar, Conversation, and Composition U 5**

Development of communication skills in Modern Hebrew; special emphasis on using new grammatical skills in advanced forms of composition and conversation.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 104 or permission of instructor. Not open to native speakers through regular course enrollment or EM credit.

**241 Culture of Contemporary Israel U 5**

Introduction to the culture of modern Israel: historical roots, socio-political institutions and developments, and literary and artistic creations reflecting the realities of contemporary Israeli society.

Su, Au, Wi, Sp Qtrs. 5 cl. H241 (honors) may be available to students in an honors program or by permission of instructor. BER/GEC/LAR course.

**293 Individual Studies U 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**294 Group Studies U 1-15**

Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.

**370 Biblical and Post-Biblical Hebrew Literature in Translation U 5**

Reading and analysis of selected chapters from the Hebrew scriptures and post-biblical Hebrew writings representative of major historical, cultural, and literary trends.

Su, Au, Wi, Sp Qtrs. 5 cl. H370 (honors) may be available to students in an honors program or by permission of instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for 273. BER/GEC/LAR course.

**371+ Medieval Hebrew Literature in Translation U 3**

Post-biblical and medieval Hebrew literature from the Near East, North Africa, and Europe.

Sp Qtr. 3 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for 272. BER/LAC course.

**372 Modern Hebrew Literature in Translation U 5**

Modern Hebrew literature; works of major writers from the middle of the 18th century to the present; emphasis on European literary influences.

Au, Wi, Sp Qtrs. 5 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for 271. BER/GEC/LAR course.

**373 Prophecy in the Bible and Post-Biblical Literature U 5**

The dynamics of Israelite prophecy and apocalyptic in the context of ancient Near Eastern culture.

Au Qtr. 5 cl. Prereq: 273.

**374 Women in Biblical and Post-Biblical Hebrew Literature U 3**

An examination of the social, legal, and religious position of women as they appear in the Hebrew scriptures and Rabbinic writings.

Au, Wi, Sp Qtrs. 3 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for 274. Taught in English. BER/LAC course.

**401 Review of Grammar and Composition U 5**

Review of Hebrew grammar; composition on assigned topics and some practice in translation.

Wi Qtr. 5 cl. Prereq: 104.

**402 Intermediate Hebrew Conversation and Composition U 5**

Vocabulary building, practice in speaking Hebrew, conversation and composition dealing with social and everyday aspects of Israeli life.

Sp Qtr. 5 cl. Prereq: 104 or permission of instructor.

**403+ Hebrew Syntax U 3**

Parts of speech, types of sentences, word order, and syntactic analysis.

Au Qtr. 3 cl. Prereq: 104 or permission of instructor.

**421 Modern Hebrew Short Story U 5**

Reading and discussion of masterpieces of modern Hebrew short stories in the 19th and 20th centuries.

Au Qtr. 5 cl. Prereq: 104 or permission of instructor. BER/LAC course.

**422 Modern Hebrew Poetry U 3**

Reading and discussion of masterpieces of modern Hebrew poetry in the 19th and 20th centuries.

Sp Qtr. 3 cl. Prereq: 104 or permission of instructor. BER/LAC course.

**425 Readings in the Mishnah U 3**

Reading and discussion of the ideas and teachings of the Mishnah as they are reflected in the unique Mishnaic language.

Au Qtr. 3 cl. Prereq: 104 or permission of instructor.

**601+ Biblical Hebrew Grammar U G 5**

Introduction to the phonology, morphology, and syntax of the Biblical Hebrew idiom.

Au Qtr. 5 cl. Prereq: 104 or permission of instructor.

**604+ Hebrew Phonetics and Vocalization U G 3**

Rules of Hebrew phonetics and vocalization; lectures and abundant practical exercises.

Au Qtr. 3 cl. Prereq: 104 or permission of instructor.

**605+ Hebrew Morphology U G 5**

The morphological system of Hebrew; the interrelations between roots and forms.

Wi Qtr. 5 cl. Prereq: 604 or permission of instructor.

**611+ History of the Hebrew Language U G 5**

Genealogical and typological relations within the Semitic family, a survey of Biblical, Mishnaic, and modern Hebrew.

Au Qtr. 2 2-hr cl. Prereq: 104 or permission of instructor.

**621+ The Bible as Literature: Selected Readings U G 5**

Critical study of basic issues in the language and analysis of biblical texts.

Sp Qtr. 2 2-hr cl. Prereq: 421 or 422 or 423.

**671 The Problem of Evil in Biblical and Post-Biblical Literature U G 5**

Study of the vexing problem of evil; the seeming contradiction between tradition and experience; extensive readings and discussions of appropriate biblical and post-biblical materials.

Wi Qtr. 4-5 cl. Prereq: 273 or 274 or equiv or permission of instructor. Given in English, but grad students and undergrad Hebrew majors will read the texts in the original Hebrew.

**680 Basic Bibliographic and Reference Tools in Hebraica, Judaica, and Semitics U G 5**

A survey of tools which may be used in doing research at all levels in the study of Hebraica, Judaica, and Semitics.

Au, Wi, Sp Qtrs. 2 2-hr cl.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**721 Studies in Hebrew Poetry U G 5**

Advanced study of specific poetic periods, figures, and/or topics involving extensive readings and discussions of appropriate primary and secondary materials.

Su, Au, Wi, Sp Qtrs. 2 2-1/2-hr cl. Prereq: 10 hrs of Hebrew at the 400 level and above, or equiv. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

Offers students with special aptitudes a greater opportunity to do independent study than is possible in the ordinary course; work in conference, library, or phonetics laboratory.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the Hebrew courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**801+ Teaching Hebrew at the College Level G 5**

Methods and techniques for teaching Hebrew at the college level.

Au Qtr. 2 wk intensive workshop followed by 1 2-hr wkly cl. Prereq: Teaching assoc in NJH or permission of instructor. For students enrolled in this course, the minimum number of hrs required for graduation is increased by 5 cr hrs.

**811 Seminar in Hebrew Studies G 5**

Intensive investigation of a selected topic or problem in Hebrew linguistics, philology, literature, or literary culture.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**998 Research in Hebrew G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## History

106 Dulles Hall, 230 West 17th Avenue, 292-2674

### 111 Western Civilization: Antiquity to the Seventeenth Century U 5

Ancient civilizations (Near East, Greece, Rome); barbarian invasions; medieval civilizations (Byzantium, Islam, Europe); Renaissance and Reformation.

H111 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq or concur: English 110 or 111. Not open to students with credit for 100.01. This course is available for EM credit. BER/GEC/LAR course. SS Admis Cond course.

### 112 Western Civilization: Seventeenth Century through Modern Times U 5

Political, scientific, and industrial revolutions; nationalism; the two world wars; decline of empires; the cold war.

H112 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 111 and prereq or concur: English 110 or 111. Not open to students with credit for 100.02 or 100.03. This course is available for EM credit. BER/GEC/LAR course. SS Admis Cond course.

### 121 African Civilizations to 1870 U 5

Exploration of the political, social, and economic history of precolonial African civilizations, using a variety of interdisciplinary approaches and materials.

Prereq: English 110 or 111 or equiv. Not open to students with credit for Black St 121. Cross-listed in Black Studies. BER/GEC/LAR course.

### 122 African Civilizations, 1870 to the Present U 5

Exploration of the political, social, and economic history of the colonial and independent African countries, using a variety of interdisciplinary approaches and materials.

Prereq: 121 or Black St 121. Not open to students with credit for Black St 122. Cross-listed in Black Studies. BER/GEC/LAR course.

### 131 Comparative Asian Civilizations I U 5

Comparative survey of development of Asian civilizations, Neolithic Age to 1500; includes ancient Near East, India, China, Japan; rise of Islam, Buddhism, Hinduism; Mongol domination.

Prereq or concur: English 110 or 111. Not open to students with credit for 140.01 or 140.02 or 140.03. BER/GEC/LAR course. SS Admis Cond course.

### 132 Comparative Asian Civilizations II U 5

Comparative survey of Asian civilizations, 1500 to modern era; includes age of great dynasties (Ottoman, Safavid, Mughal, Ming, Ch'ing, Tokugawa); imperialism; nationalism; independence.

Prereq: 131 and prereq or concur: English 110 or 111. Not open to students with credit for 140.01 or 140.02 or 140.03. BER/GEC/LAR course. SS Admis Cond course.

### 151 American Civilization to 1877 U 5

The political, constitutional, social, and economic development of the United States from the colonial period through the era of Reconstruction.

H151 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq or concur: English 110 or 111. Not open to students with credit for 150.01. This course is available for EM credit. BER/GEC/LAR course. SS Admis Cond course.

### 152 American Civilization since 1877 U 5

The political, constitutional, social, and economic development of the United States from the era of Reconstruction to the present.

H152 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 151 and prereq or concur: English 110 or 111. Not open to students with credit for 150.02. This course is available for EM credit. BER/GEC/LAR course. SS Admis Cond course.

### 171 Latin American Civilizations to 1825 U 5

Latin American political, social, economic, and cultural history from Pre-Columbian times to independence (1825) focussing on imperialism, religion, minorities, war, and rebellion.

Prereq or concur: English 110 or 111. Not open to students with credit for 150.03 or 161. BER/GEC/LAR course.

### 172 Latin American Civilizations since 1825 U 5

Latin American political, social, economic, and cultural history from independence (1825) to the present focussing on neo-colonialism, instability, underdevelopment, militarism, and minorities.

Prereq: 151 and 152, or 171; and prereq or concur: English 110 or 111. Not open to students with credit for 150.03 or 161 or 240. BER/GEC/LAR course.

### 200 World History U 5

Credit will not count toward a major in history. BER/GEC/LAR courses.

#### 200.01 World History to 1500

History of the human community to 1500, primary emphasis on history of civilizations, and secondary emphasis on patterns of regional and hemispheric integration.

Prereq: English 110 or 111 or permission of instructor.

#### 200.02 World History, 1500 to Present

History of the human community from 1500 to the present, primary emphasis on processes of global integration, and secondary emphasis on comparative civilization.

Prereq: 200.01 and prereq or concur: English 110 or 111 or permission of instructor.

### 201 Ancient Mediterranean Civilizations U 5

Comparative historical analysis of ancient Mediterranean civilizations: emphasis on Greek and Roman societies, urbanism, empires, literature, arts; from the Bronze Age to Fall of Rome. Balcer, Gregory, and Rosenstein.

Not open to students with credit for 110.01. BER/LAC course. SS Admis Cond course.

### 211 Great Figures of Modern Europe U 5

Study of modern European history through an examination of the lives and times of great figures. Rule.

BER/LAC course. SS Admis Cond course.

### 212 Great Figures in British Civilization U 5

British civilization as seen through the lives of men and women who illustrate the economic, social, political, cultural, and intellectual life of their times.

SS Admis Cond course.

### 215 Contemporary Europe, 1914 to Present U 5

World War I; political, social, and economic developments of the interwar period; Communism, Nazism; World War II; Europe between East and West; moves toward unification. Beyerchen.

SS Admis Cond course.

### 220 Russian Civilization U 5

A survey of Russian civilization from earliest times to 1917; geography, peoples, culture, social, political, and religious institutions, and the impact of Westernization. Curran, Levin, and Wildman.

BER/LAC course. SS Admis Cond course.

### 223 History of Afro-Americans in the Age of Slavery U 5

Origins of modern slavery; its development in the US: the evolution of Afro-American life and culture from 1619 to the end of the Civil War. Shaw and Stevenson.

Not open to students with credit for 260; or Black St 223 or 345. Cross-listed in Black Studies. BER course.

### 224 History of Afro-Americans from Emancipation to the Present U 5

The rise of debt peonage among blacks; the formation of the northern ghetto; the Civil Rights Movement and beyond. Shaw and Stevenson.

Not open to students with credit for 260; or Black St 224, or 238 and 345. Cross-listed in Black Studies. BER course.

### 231 Great Figures in American History U 3

Main trends of American development through the medium of biography; historical background, comparison and contrast of leading figures, and analysis of motivation and character. Van Tine.

3 cl. SS Admis Cond course.

### 233 Scientific Revolutions in Their Social Context U 5

Models of scientific innovation and study of selected examples of the great scientific revolutions: Copernican, Chemical, Darwinian, Quantum, Genetic, and others. Burnham.

BER/LAC course. SS Admis Cond course.

### 236 Environmental Issues in International and Historical Perspective U 3

International overview of the evolution of environmental problems and of the rationales and movements for protecting the environment, with concentration on the 19th and 20th centuries.

### 237 History of Women in the United States U 5

American women and the economic, social, and political factors responsible for women's status in society from the colonial period to the present.

BER/GEC course. SS Admis Cond course.

### 240 Classical Archaeology U 5

Introduction to the principles, methods, and history of archaeological investigation in the ancient Greek and Roman world, illustrated through a selection of major classical sites.

Not open to students with credit for Classics 240 or Hist Art 240. Cross-listed in Classics and History of Art. BER/GEC/LAR course.

**251 Ancient and Medieval Jewish Civilization U 5**

Jewry and Judaism from remote antiquity to the 15th century A.D. Cohen. BER/GEC/LAR course. SS Admis Cond course.

**252 Modern Jewish Civilization U 5**

Jewry and Judaism from the 15th century to the present. Berkowitz and Cohen.

BER/LAC course. SS Admis Cond course.

**254 The Holocaust: Destruction of European Jewry, 1933-1945 U 5**

The historical background of the holocaust; dimensions of destruction; world response; post war trials; moral and philosophical issues. Berkowitz. SS Admis Cond course.

**258 Religion and Politics in the Islamic World U 5**

Elaboration of prophetic message of Islam into governing principles of classical Islamic polity; further evolution of these principles in later Islamic states. Findley and Waldman.

BER/LAC course. SS Admis Cond course.

**265 Traditional East Asia to 1800 U 5**

East Asian history from the earliest times to 1800: Confucianism, Buddhism, Shinto; Chinese culture and its spread to Japan; the growth of indigenous Japanese culture. Bartholomew, Chang, and Chu.

SS Admis Cond course.

**266 Modern East Asia since 1800 U 5**

Political, economic, cultural, and ideological change in East Asia; interregional and international relations; the feudal legacy, nationalism, and communism. Bartholomew, Brown, Chang, and Chu.

BER/LAC course. SS Admis Cond course.

**268 History of Contemporary China U 5**

Origins of the Chinese revolution and the rise of Mao; problems of political integration, economic growth, and social transformation. Chu.

SS Admis Cond course.

**281 History of World War II U 3**

An examination of the background, diplomacy, course, strategy, and critical turning points of World War II. Guilmarin, Murray, and Millett.

3 cl. SS Admis Cond course.

**282 The Vietnam War U 3**

An examination of the causes, conduct, and effects of the revolutionary war in Vietnam from 1945 to 1975. Guilmarin, Millett, and Murray.

**286 History of American Criminal Justice U 3**

History of crime, criminal law, law enforcement agencies, prisons, and juvenile courts. Watts.

SS Admis Cond course.

**290 Survey of American Intellectual History U 5**

American thought from colonial times to the present with emphasis on the relation between dominant ideas and the behavior and beliefs of the population. Burnham.

SS Admis Cond course.

**294 Group Studies in History U 3-5**

Groups of students are given an opportunity to pursue special studies not otherwise offered.

Repeatable to a maximum of 15 cr hrs.

**302 The Historian's Craft U 5**

Problems and practice in historical research, analysis, and presentation. Brown, Dale, Rothney, and Waldman.

**510 The Ancient City U G 5**

Cities in the ancient Near East, Greece, and Rome, with an emphasis on their physical form and historical importance. Gregory.

**523 Women in the Western World: Ancient Civilization to the Industrial Revolution U G 5**

Women and the economic, social, and political factors responsible for their status in society. Robertson and Rupp.

**524 Women in the Western World: The Industrial Revolution to the Present U G 5**

A continuation of 523. Robertson and Rupp.

**529 Modern Greece U G 5**

Greece from 1453 to the present; Turkish rule, War of Independence, emergence of the modern state; focus on political, social, and cultural developments. Gregory.

**563 Emergence of Modern America, 1877-1917 U G 5**

Intensive study of political, economic, social, and cultural change in the U.S. from 1877 to 1917; industrialism, unionism, Populism, progressivism, immigration, and urbanization. Kerr and Van Tine.

**564 Business in American Life: Colonial Times to Present U G 5**

The strategy and structure of American business expansion colonial times to the present; the roles businesses have played in society and politics. Blackford, Childs, and Kerr.

**565 America in Crisis, 1917-1945 U G 5**

Intensive study of political, economic, social, and cultural change in the U.S. since 1945; World War, isolationism, internationalism, prosperity, and depression. Childs, Kerr, and Van Tine.

**566 Contemporary America since 1945 U G 5**

Intensive study of political, economic, social, and cultural change in the U.S. since 1945; war, cold war, social pluralism, institutional conflicts, and domestic crises. Hogan and Watts.

**568 Business in the Age of Modernization U G 5**

A historical comparison of the development of modern forms of business and business management in Great Britain, the United States, and Japan. Bartholomew and Blackford.

**570 History of the Early Christian Church in the West U G 5**

Christian origins and expansion to 600 A.D.; conflict with Roman Empire; internal dissent; basic institutions; Christian intellectuals; the imperial established church; monasticism; papacy; the barbarians and Christianity. Lynch.

**571 History of the Medieval Church in the West U G 5**

The late ancient and early medieval church; the papacy and the Carolingians; the Cluniac reform; the new monasticism; heresy; the problems of late medieval Christianity. Pegues.

**578 American Religious History U G 5**

Survey of religious history of the United States from colonial times to the present.

**585 History of American Law U G 3**

The development of American legal institutions, procedures, sanctions, and remedies in their social and political context in the formative era. Benedict.

**597 Critical Issues of the 20th-Century World U 5**

Contemporary global problems in historical perspectives; war and threat of war; intercontinental, racial, ideological, and economic conflicts; the search for a new world order.

Prereq: Sr standing. Not open to students with credit for 400. BER/GEC/LAR course.

**598 Seminars U 5**

GEC/LAR courses.

**598.01 Senior Colloquium**

The nature of historical judgment and interpretation: the roles of evidence, approach, and presuppositions.

Prereq: Sr history majors or written permission of instructor. Not open to students with credit for 598 or 598.02.

**598.02 Proseminar in History**

Designed to give undergraduate majors experience in the analysis of historical problems through a reading and research program.

Prereq: 302 and sr standing in history, or written permission of instructor. Not open to students with credit for 598 or 598.01.

**H599 Honors Proseminar in History U 5**

Designed to give honors undergraduates experience in the analysis of historical problems through a reading and research program designed to meet their special needs.

Prereq: 302, and 10 cr hrs of 100-200 level history courses, with a 3.20 cumulative pt-hr ratio.

**General Prerequisites for Courses Numbered 600 and 700**

*Unless otherwise indicated the prerequisites for 600- and 700-level courses are four quarter courses in the social science field, of which at least two must be in history. Not open to freshmen and sophomores except with permission of instructor.*

**600 The Ancient Near East U G 5**

The ancient history of Mesopotamia, Egypt, Anatolia, Persia, Israel, and the Levant to the establishment of the Persian Empire; readings from sources in translation. Balcer.

**601 Greek History U G 5****601.01 History of Archaic Greece**

History of Greece from the early Stone Age communities to the end of the Greek-Persian conflicts, 479 B.C.; readings in the sources in translation. Balcer.

**601.02 History of Classical Greece**

History of classical Greece from the foundation of the Delian Confederacy to the death of Alexander III; reading in the sources in translation. Balcer.

**601.03 History of the Eastern Mediterranean during the Bronze Age**

Studies in the civilizations of Minoan Crete and Helladic/Mycenaean Greece in relationship with the Trojans, Hittites, Philistines, Cypriotes, Syrians, and Egyptians. Balcer.

5 cl.

**602 Hellenistic Near East U G 5**

The cultural history of the Achaemenid and Hellenistic kingdoms from c. 600 to 31 B.C., with emphasis upon Greek and Persian interaction in the Near East. Balcer.

**603 Roman History U G 5****603.01 Roman Republic**

A history of Rome from the founding to the fall of the Roman Republic; readings in ancient sources in translation. Rosenstein.

**603.02 Early Roman Empire, 31 B.C.-A.D. 180**

The Roman Empire at its height; internal politics, imperial administration, and religion; readings from sources in translation. Rosenstein.

**603.03 Later Roman Empire, A.D. 180-476**

Decline and fall of the Empire in the West; military, social, economic problems; religious conflicts; emergence of Germanic kingdoms; readings from sources in translation. Gregory.

**605 Jewish History****605.01 Second Commonwealth U G 3**

The restoration of Jewish statehood following the first Babylonian Exile and the history of Palestinian Jewry and of the Jewish Diaspora down to the 2nd Century A.D.

**605.04 Jews in the Western World in Modern Times U G 5**

Changing patterns of Jewish life since the Jews' struggle for Emancipation; migration movements and the shift of Jewish centers in Europe and the New World.

5 cl. Prereq: 111 or 112.

**605.05 Jewish Settlement in Palestine U G 5**

Jewish immigration to Palestine, rise of modern Zionism, the British Mandate, and the state of Israel.

**605.06 History of Ancient Israel U G 5**

The rise of the Jewish nation and religion in the Ancient Near East; settlement in Canaan; the Israelite and Judean monarchies until their conquest by Assyria and Babylonia.

**605.10 Messiahs and Messianism in Jewish History U G 5**

The history of the Jewish messianic idea and of Jewish messianic leadership, from ancient to modern times.

**605.13 Judaism and Christianity in Conflict U G 5**

The conflict between church and synagogue from New Testament times to the high Middle Ages. Cohen.

**606 Medieval History U G 5****606.04 Medieval Europe I**

Europe 300-1100; Roman decline, Christianization of Europe, barbarian invasions; Carolingian renaissance; early feudalism and manorialism; investiture contest; crusades; economic and intellectual revival. Lynch.

**606.05 Medieval Europe II**

Europe 1100-1500; the 12th-century Renaissance; classical feudalism; rise of Christendom; the great economic revival; universities and scholasticism; religious dissent; and 14th-century crises. Pegues.

**607 Byzantine History U G 5****607.01 Early Byzantine Empire**

History of Byzantium, A.D. 330-843, with emphasis on internal political and religious developments and the relationship between Byzantium and its neighbors. Gregory.

**607.02 Later Byzantine Empire**

History of Byzantium, A.D. 843-1453, with emphasis on internal developments, the Crusades, the Fall of the City, and the legacy of Byzantium. Gregory.

**609 The Renaissance U G 5**

The literary, artistic, and intellectual achievements primarily of Renaissance Italy against the background of economic, political, and social developments in western Europe. Davis, Kittelson, and Pegues.

**610 The Reformation U G 5**

The rise and growth of Protestantism and the Catholic Reformation of the 16th century against the background of economic, political, and social developments in western Europe. Kittelson.

**History of Biology**

See Plnt Bio 601.

**612 Europe, 1600-1775 U G 5**

A study of the rise of the absolute state, the changing diplomatic alignments, and the Enlightenment. Rule.

**613 French Revolution and Napoleon U G 5**

The background of the Revolution; the social bases and political schisms of the first three Revolutionary governments, 1789-1795; the program and role of Napoleon. Rule.

**614 Europe, 1815-1914 U G 5**

Nationalism, the democratic movement, economic growth, imperialism, and cultural advance from the Congress of Vienna to World War I.

**615 France, 1815-1914 U G 5**

France's transformation from a rural, traditional society to a modern, industrial society, and the relation of this transformation to 19th-century political and intellectual movements. Rothney.

**616 France in the 20th Century U G 5**

The impact on France of two world wars, the depression and decolonization, with emphasis on the breakdown of the political system and the emergence of a new society from the wreckage of the old. Rothney.

**618 German History U G 5****618.01 Germany in the 19th Century**

Political, social, economic, and cultural developments from the Prussian reform movement to World War I, with emphasis on German unification and the origins of the war. Beyerchen.

**618.02 Germany in the 20th Century**

World War I; the Weimar period; Hitler and the Third Reich; and the two Germanies after 1945. Beyerchen.

**619 European Labor in the 20th Century U G 5**

History of European labor movements and of working class life from World War I to the present.

Prereq: 112 or a course in 20th century European history recommended.

**620 Historical Perspectives on Sexuality: Same Sex Sexuality in the Western World U G 5**

History of same-sex love and sexuality from ancient times to the present. Rupp.

**623 European International History**

Fink and Hill.

**623.01 19th Century**

History of the international relations and diplomacy of Europe from the Congress of Vienna to the First World War.

**623.02 20th Century**

History of the international relations and diplomacy of Europe from the First World War to the present.

**625 History of European Warfare U G 5****625.01 History of European Warfare from the Renaissance to 1870**

An analysis of military affairs and of their interaction with political and diplomatic history. Murray.

**625.02 History of European Warfare from 1870 through World War II**

A continuation of 625.01; an analysis of the military and diplomatic events which shaped the world in the 20th century. Murray.

**626 East Central Europe U G 5****626.01 Habsburg Empire, 1740-1918**

A century and a half of Habsburg history with emphasis on Austria's responses to Enlightenment ideas, the French Revolution, social change, industrialization, and emerging nationalisms.

**626.02 Balkans from the Ottoman Conquest to World War I**

An historical survey of the Balkan peoples; political, social, economic, and cultural development; emphasis on the emergence and expression of Balkan nationalisms.

**626.03 East Central Europe since 1919**

A survey of East Central Europe from the end of World War I to the present.

**628 Revolutionary Russia, 1880-1914 U G 5**

The revolutions of 1905 and 1917 from the standpoint of the revolutionary movements of the 19th century and changing social and political forces.

**630 Medieval England U G 5**

England from the Roman conquest to 1485; Anglo-Saxon society and institutions; the Norman conquest; law and Parliament; social, intellectual, and economic growth of the English people. Pegues.

**631 Tudor and Stuart England U G 5**

The religious, political, economic, imperial, and intellectual development of the English people from 1485 to 1714, with special attention to the constitutional struggles of the 17th century. Sweet.

**632 England in the 18th and 19th Centuries U G 5**

The course of political, social, and intellectual change, of industrial and commercial growth in Hanoverian and Victorian England. Garland.



**633 England in the 20th Century U G 5**

A study of Britain since 1900 with special emphasis on the rise of the Labour party and the development of the social welfare state. Garland.

**634 Europe since 1945 U G 5**

Europe since the disaster of the Second World War; recovery, decolonization, integration, creation of a new society, and search for identity. Hill.

**635 History of Russia to 1725 U G 5**

A survey from the origins of the Russian state to the end of the reign of Peter the Great. Levin.

**636 History of Russia, 1725-1914 U G 5**

A survey from the end of the reign of Peter the Great to the outbreak of World War I.

**637 Soviet Russia U G 5**

Beginning with the background and events of the revolution of 1917, analysis of developments in Russian history from World War I to the present. Levin, and Wildman.

**638 Russian Intellectual History U G 5**

A survey of the main currents of Russian social, political, economic, and philosophical thought in the 19th century; liberalism, conservatism, and socialism.

**640 Islamic Spain and North Africa U G 5**

Major problems in history and culture of Islamic Spain (712-1492) and North Africa (641-present), including Egypt; special emphasis on nomadism and revivalism. Waldman.

**641 Early Islamic Institutions, 600-1258 U G 5**

Origins and early development of selected fundamental Islamic institutions in their historical and cultural context. Waldman.

**642 Ottoman Empire, 1300-1800 U G 5**

The Ottoman Empire from frontier warrior band to world power to "Sick Man of Europe"; factors in upsurge and decline; cultural interaction with the West. Findley.

**643 History of Islam in Africa U G 5**

Examination of the history and spread of Islam in Africa and its impact on African social, economic, and political institutions.

Sp Qtr. 2 2-hr cl. Prereq: 121 or 122, or Black St 121 or 122; or grad standing. Not open to students with credit for Black St 643. Cross-listed in Black Studies.

**644 Middle East in the Modern Era, 1800 to Present U G 5**

Modernization of the Middle East, from the early autocratic modernizers to the present; economic, social, political, and intellectual transformations; modern Middle East in world perspective. Findley.

**645 History of India and Central Asia U G 5****645.02 Muslim India**

The Sultanate and Mughal Empires (1000-1707 A.D.); emphasis on imperial institutions and the interaction of Hindu and Muslim societies. Dale.

**646 Modern China, 1800-1949 U G 5**

History of modern China with emphasis on cultural contact between China and the West. Chang and Chu.

Not open to students with credit for 697 prior to Au Qtr 1985.

**647 History of Traditional Japan U G 5**

Problems regarding the political, intellectual, and institutional history of Japan prior to the arrival of Perry (1851). Bartholomew and Brown.

**648 History of Modern Japan U G 5**

Political, social, and intellectual history of Japan from the beginning of the Meiji Period (1868) to the present. Bartholomew and Brown.

**649 History of Business in Japan U G 5**

An examination of the interaction between business, technology, and scientific changes between 1600 and the present. Bartholomew and Brown.

**650 History of Spain, 1469-Present U G 5**

Unification of the thrones; the rise and fall of empire; rivalry with Portugal; Napoleon to the Civil War; Franco and the Post-Franco Era. Andrien.

**651 Latin American History U G 5****651.01 Colonial Latin American History**

Mayan, Aztec, and Incan Empires; the Spanish and Portuguese conquests and the transplanting of Iberian institutions; the Baroque period; the Bourbon Century and the Enlightenment. Andrien.

**651.02 South America since Independence**

Nation-building in the South American republics during the 19th and 20th centuries with special emphasis on Argentina and Brazil. Cooper.

**651.03 Central America and the Caribbean since Independence**

Political, economic, and cultural history of West Indies (Cuba, Haiti, Dominican Republic, etc.) and Central America (Panama, Guatemala, Nicaragua, etc.) and relations with United States. Cooper.

**651.06 History of Brazil**

History of Brazil during colonial and independence periods with major emphasis on the 19th and 20th centuries. Cooper.

**651.07 History of Mexico**

History of Mexico during precolonial, colonial, and independence periods with emphasis on the 19th and 20th centuries. Cooper.

**653 History of Religions U G 5**

Introduction to the field of the history of religions; surveying the history of eastern, western, and traditional religions from the ancient period to the present.

**656 American Colonies U G 5**

The transplanting of European civilization to North America, the resultant international rivalries, and the political, social, and economic life of the English colonies to 1763.

**658 American Revolution and New Nation, 1763-1800 U G 5**

A continuation of 656 but may be taken separately; primary emphasis on social, intellectual, and economic factors.

**659 Jeffersonian and Jacksonian Democracy, 1800-1840 U G 5**

A continuation of 658 but may be taken separately; primary emphasis on ideological, cultural, and political factors. Roth.

**660 Westward Movement since 1783 U G 5**

The westward spread of settlement and the influence of the westward movement on American development. Blackford.

**661 Slavery in the United States U G 5**

The social system of the Old South; the various aspects of secession and the impact of war.

5 cl or 2 2-hr cl.

**662 Civil War and Reconstruction U G 5**

The causes, character, and consequences of America's intersectional war and the post-war settlement. Benedict.

5 cl or 2 2-hr cl.

**668 American Military Policy U G 5****668.01 American Military Policy, 1607-1918**

American military policy from the colonial period through World War I and America's emergence as a world power; emphasis on war-waging and military institutions. Grimsley and Millett.

**668.02 American Military Policy, 1919 to Present**

Emphasis on collective security, nuclear strategy, and the reciprocal impact of society and military institutions. Millett.

**670 U.S. Diplomatic History U G 5****670.01 U.S. Diplomatic History: From Independence to 1900**

Domestic and international setting of U.S. diplomacy from the Revolutionary War to the emergence of the United States as a world power.

Not open to students with credit for 670.

**670.02 U.S. Diplomatic History: From 1900 to World War II**

Domestic and international setting of U.S. diplomacy during the period of transition from the multipolar world of 1900 to the bipolar world of 1945.

Not open to students with credit for 671.

**670.03 U.S. Diplomatic History: From World War II to the Present**

Domestic and international setting of U.S. diplomacy from the beginning of the Cold War in the 1940's to its waning in the 1990's.

Not open to students with credit for 671.

**672 Central African History U G 5**

Specific themes on central African history.

Wi Qtr. 3 cl. Prereq: 122 or Black St 122 or grad standing or permission of instructor. Not open to students with credit for Black St 636 or 672. Cross-listed in Black Studies.

**673 West African History U G 5**

An examination of the processes of state formation, trade, and civilization in Africa's Sudanese and Guinean regions.

Au Qtr. 2 2-hr cl. Prereq: 122 or Black St 122 or grad standing or permission of instructor. Not open to students with credit for Black St 538 or 673. Cross-listed in Black Studies.

**674 Africa before Colonial Rule U G 5**

Examination of pre-colonial political, economic, and social systems, including material culture and agriculture.

Au Qtr. 2 2-hr cl. Prereq: 122 or Black St 122 or grad standing or permission of instructor. Not open to students with credit for Black St 611 or 674. Cross-listed in Black Studies.

**675 History of South Africa U G 5**

An examination of the political and social developments in South Africa from the nineteenth century to the present.

Sp Qtr. 2-2 hr cl. Not open to students with credit for Black St 537 or 675. Cross-listed in Black Studies.

**676 Topics in Women's History U G 5**

In-depth analysis of selected topics in American, European, and/or Third World women's history; topic varies by quarter.

Repeatable to a maximum of 15 cr hrs.

**677 History of the Family U G 5**

Evolution of the family, primarily in Europe and the United States, with attention to minorities and cross-cultural comparisons. Robertson.

Prereq: 111 and 112, or 151 and 152, or 223 and 224, or 237, or 523 and 524.

**680 History of American Science U G 5**

Social and intellectual factors from colonial beginnings to professionalization; Darwinism; American preeminence; the modern scientific crisis. Burnham.

Prereq: Jr standing.

**683 History of Ohio U G 3**

A general survey of state history—social, economic, religious, and political—from the Indian period to the present time. Hopkins.

**684 History of American Medicine U P G 3**

Disease, public health, and the profession and practice of medicine in America from colonial times to the present. Burnham.

**685 United States Constitutional History: The Federal System U G 5**

Historical development of constitutional powers and functions of the federal and state governments and intergovernmental relationships. Benedict.

**686 United States Constitutional History: Rights and Immunities U G 5**

Historical development of the constitutional rights and immunities of the citizen. Benedict.

**688 American Urban History U G 5****688.01 American Urban History since Colonial Times**

A survey of American urban development, and its impact on national history, from the beginning of colonization to the present.

**689 American Labor History U G 5****689.01 History of the American Labor Movement**

Evolution of trade unionism in American life from the late 18th century to the present; attention to critical evolution of changes in labor history. Van Tine.

**691 History of the Chinese Intellectual Tradition U G 5**

A study of the major trends of thought in the Chinese tradition with emphasis on the axial age transformation.

Prereq: 131 or 265 recommended.

**692 Workshop U G 1-8**

Arr.

**693 Individual Studies U G 1-3**

Individual study in some field of historical development; designed to allow the student to work on a problem of particular interest.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

The investigation of particular problems in various fields of history.

Repeatable to a maximum of 30 cr hrs.

**695 Classical China, 1400 B.C. to 220 A.D. U G 5**

The political, economic, and cultural life of ancient China from the Shang dynasty to the end of the Han dynasty. Chang and Chu.

**696 Traditional China, 220 A.D. to 1800 A.D. U G 5**

The political, economic, and cultural life of medieval China from the Age of Disunity to 1800 A.D. Chang and Chu.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****699 Chinese-American Relations in the 19th and 20th Centuries U G 5**

The commercial, cultural, and diplomatic relations between China and the United States with emphasis on the period since 1912. Chu.

**700 Studies in World History G 5**

Analysis of seminal works and concepts in the development of global-scaled integrative approaches to world history. Findley.

Prereq: Course work at the 600 level or above in history of more than one civilization and permission of instructor Repeatable to a maximum of 15 cr hrs.

**702 Advanced Topics in National Security U G 5**

Examination of various topics in the field of national security; survey of literature in field; identification of major problem areas.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs including credit in NSP Stds 702. Cross-listed in National Security Policy Studies. Cross-referenced in Political Science.

**702.01 US-USSR Foreign Policy and Strategic Rivalry**

The politics and diplomacy of nuclear weapons since 1945.

**702.02 International Conflict and Peace**

Introduction to theoretical and empirical literature in the study of conflict and peace.

**702.03 Arms Control**

Examination of the US-Soviet strategic arms competition and the threat of nuclear proliferation.

**702.04 Defense Economics and Weapons System Acquisition**

The role of defense investment in national security and the process of weapons system acquisition.

**702.05 Development of the Military Profession**

The development of the military profession in America from the Revolution to the 1970's.

**702.06 War since 1945**

The conduct and results of conventional war in the post-1945 world.

**702.07 North Atlantic Treaty Organization**

The study of the origins, institutions, and evolution of the North Atlantic Treaty Organization in the broader contexts of West European politics and US-West European relations.

**706 Studies in Medieval History****706.01 Advanced Readings in Medieval History U G 5**

Advanced reading course in sources and monographs on the principal issues and problems in medieval history, with a stress on bibliography. Gregory, Lynch, and Pegues.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**706.02 Late Medieval Paleography and Diplomatics U G 3**

Cursive hands in literature and diplomas, 1200-1500; the development of chanceries; notariats, secretariats, and the science of diplomatics; exercises with facsimiles, slides, and microfilm. Pegues.

Prereq: Permission of instructor.

**708 Studies in Ancient History U G 5**

An intensive study of selected problems and sources in ancient history (Near Eastern, Greek and/or Roman); readings in the primary and secondary materials. Balcer, Gregory, and Rosenstein.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**709 Methodology in Ancient History G 5**

Introduction to the methodologies and bibliographies fundamental to graduate study of ancient Greek and Roman history through written papers and oral class reports.

Minimum of 2 hrs weekly in class; other time in library research. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**710 Studies in Renaissance or Reformation History U G 5**

Principal issues in the history of the Renaissance or the Reformation. Davis and Kittelson.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**712 Studies in Early Modern European History U G 5**

Selected topics in western European history of the 17th and 18th centuries. Rule.

Prereq: 612 or permission of instructor. Open only to grad students and by permission to srs majoring in history. Repeatable to a maximum of 15 cr hrs.

**714 Studies in French History since 1815 U G 5**

An intensive study, through reading and discussion of standard works and recent scholarship, of the chief interpretative problems of modern French history. Rothney.

Prereq: Grad standing or by permission to srs majoring in history. Repeatable to a maximum of 10 cr hrs.

**723 Studies in European International History G 5**

Readings in and discussion of the history of European international relations from the late 19th century. Fink and Hill.

Repeatable to a maximum of 20 cr hrs.

**726 Studies in Jewish History U G 5**

An intensive study of selected issues in Jewish history; emphasis on problems posed by available source material and by current research in the area. Berkowitz and Cohen.

Prereq: Grad standing or by permission to srs majoring in history. Repeatable to a maximum of 15 cr hrs.

**727 Studies in Islamic History U G 5**

Selected topics in Islamic history and historiography. Dale, Findley, and Waldman.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**731 Studies in European History, 1914 to Present U G 5**

Political, social, and economic developments; World Wars I and II; Communism, Nazism; present-day Europe; emphasis on methods of historical research and documentary analysis.

Open only to grad students and by permission to srs majoring in history. Repeatable to a maximum of 10 cr hrs.

**732 Studies in German History U G 5**

Exploration of selected topics of 19th and 20th century German history; emphasis on methods of historical research and documentary analysis. Beyerchen.

Prereq: 618 or equiv. Open only to grad students and by permission to srs majoring in history.

**738 Studies in British History U G 5**

Selected problems in British history since 1760; emphasis on different schools and interpretations, on methods of research, and an analysis of documents. Garland and Swett.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**740 Studies in Russian and Soviet History U G 5**

An intensive study of problems in selected periods of Russian history. Levin and Wildman.

Open only to grad students and by permission to srs majoring in history. Repeatable to a maximum of 15 cr hrs.

**751 Studies in Latin American History U G 5**

An intensive study of problems in selected periods of Latin American history. Andrien and Cooper.

Prereq: Grad standing or permission of instructor for srs majoring in history or a cognate Latin American field. Repeatable to a maximum of 10 cr hrs.

**752 Readings in African-American History U G 5**

Readings in the evolution of black culture, economics and family life, race relations, and the emergence of class stratification within the black community. Shaw and Stevenson.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs including cr hrs in Black St 752. Cross-listed in Black Studies.

**753 Studies in the History of Religion G 5**

An intensive readings course in some aspect of the history of religion; specific topic to be announced.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**761 Studies in Mid-19th Century American History U G 5**

An intensive study of selected topics with emphasis on historiography and bibliography.

Repeatable to a maximum of 10 cr hrs.

**765 Studies in Quantitative History U G 5**

Prereq: Permission of instructor.

**765.01 Studies in Quantitative History I**

A methodological introduction to the literature of quantitative history. Watts.

**767 Studies in Military History U G 5**

Selected topics and periods in military history; emphasis on recent scholarship.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**768 Studies in Military Thought and Strategy U G 5**

Analysis and comparison of the most influential writers on the theory and practice of warfare including Thucydides, Machiavelli, Clausewitz, Mahan, Fuller, and Liddell Hart. Grimsley, Guilmartin, Millett, and Murray.

Prereq: 668 or equiv.

**770 Studies in the History of American Foreign Policy U G 5**

Studies in the main problems of American foreign policy with primary emphasis on basic literatures and selected primary materials. Hogan.

Prereq: 670. Repeatable to a maximum of 15 cr hrs.

**772 Studies in Recent United States History U G 5**

Readings in selected topics in American history since 1898. Burnham, Hartmann, Kerr, Van Tine, and Watts.

Prereq: Undergrads by permission of instructor. Repeatable to a maximum of 20 cr hrs.

**773 Studies in Business History U G 5**

Readings in the growth of capitalism, the rise of the modern corporation, government-business relations, business and society, and comparative business history. Blackford and Childs.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**781 Studies in Women's History U G 5**

An intensive reading course designed to prepare graduate students in the field of women's history; topic varies. Hartmann, Rupp, and Shaw.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**H783 Honors Research U 3-5**

Informal conferences to allow full scope to the initiative of the student; a special topic is assigned and results are tested by papers and special examinations.

Prereq: 4th yr standing and 40 cr hrs in history courses with a grade of A in at least half of the history courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA *with distinction* in history. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**784 Readings in American Constitutional and Legal History U G 5**

An intensive investigation of standard works as well as influential and seminal articles in American constitutional and legal history. Benedict.

Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**785 Studies in Early American History U G 5**

Studies in the basic historical literature of 17th and 18th century America. Benedict.

Repeatable to a maximum of 10 cr hrs.

**786 Colloquium in the Philosophy of History, Historiography, and the Historian's Skills I U G 5**

Colloquium on the principles of historical thought, historiography, and methods of historical research.

Prereq: Grad standing in history or permission of instructor. Required of MA and PhD candidates in history.

**787 Colloquium in the Philosophy of History, Historiography, and the Historian's Skills II U G 5**

Continuation of 786 with emphasis on research methods.

Prereq: 786 or permission of instructor. Required at the discretion of the adviser.

**788 Studies in American Urban History U G 5**

A detailed examination of several themes in the growth of urban America. Stevenson.

Prereq: 688 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**796 Studies in Japanese History U G 5**

An intensive study, through reading and discussion, of major issues and recent scholarship in Japanese history. Bartholomew and Brown.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

**798 Studies in Modern Chinese History U G 5**

Readings in documents and monographs; 19th and 20th century Chinese history. Chang and Chu.

Repeatable to a maximum of 15 cr hrs. Knowledge of Chinese desirable but not required.

**800 Seminar in Renaissance and Reformation History G 5**

Research topic to be announced. Each subdivision repeatable to a maximum of 10 cr hrs.

**800.01 Seminar in Renaissance or Reformation History I**

Renaissance (Davis) and Reformation (Kittelson).

This course is Progress ("P") graded. Credit will be awarded upon completion of 800.02.

**800.02 Seminar in Renaissance or Reformation History II**

Continuation of 800.01.

**801 Seminar in German History G 5**

Research topic to be announced. Beyerchen.

Repeatable to a maximum of 15 cr hrs.

**802 Seminar in Russian and Soviet History G 5**

Research topics to be announced.

Each decimal subdivision repeatable to a maximum of 18 cr hrs.

**802.01 Seminar in Russian and East European History I**

Levin, Livezeanu, and Wildman.

This course is Progress ("P") graded. Credit will be awarded upon completion of 802.02.

**802.02 Seminar in Russian and East European History II**

Continuation of 802.01.

**803 Seminar in British History G 5**

Research topic to be announced. Garland and Swett.

Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**803.01 Seminar in British History I**

This course is Progress ("P") graded. Credit will be awarded upon completion of 803.02.

**803.02 Seminar in British History II**

Continuation of 803.01.

**804 Seminar in East Central European History G 5**

Research topic to be announced.

Repeatable to a maximum of 15 cr hrs.

**805 Seminar in French History G 5**

Rothney and Rule.

Repeatable to a maximum of 15 cr hrs.

**807 Seminar in Medieval History G 5**

Research topic to be announced. Gregory, Lynch, and Pegues.

Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**807.01 Seminar in Medieval History I**

This course is Progress ("P") graded. Credit will be awarded upon completion of 807.02.

**807.02 Seminar in Medieval History II**

Continuation of 807.01.

**808 Seminar in Ancient History G 5**

Topic to be announced. Balcer, Gregory, and Rosenstein.

Prereq: Permission of instructor. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**808.01 Seminar in Ancient History I**

This course is Progress ("P") graded. Credit will be awarded upon completion of 808.02.

**808.02 Seminar in Ancient History II**

Continuation of 808.01.

**810 Seminar in World History G 5**

Research topics to be announced. Andrien, Chang, Chu, Findley, and Waldman.

Prereq: 700 or permission of instructor. Each subdivision repeatable to a maximum of 10 cr hrs.

**810.01 Seminar in World History I**

This course is Progress ("P") graded. Credit will be awarded upon completion of 810.02.

**810.02 Seminar in World History II**

Continuation of 810.01.

**823 Seminar in European International History G 5**

Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**823.01 Seminar in European International History I**

Fink. Hill.

This course is Progress ("P") graded. Credit will be awarded upon completion of 823.02.

**823.02 Seminar in European International History II**

Continuation of 823.01.

**827 Seminar in the History of the Islamic World G 5**

Research topic to be announced. Dale, Findley, and Waldman.

Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**827.01 Seminar in the History of the Islamic World I**

This course is Progress ("P") graded. Credit will be awarded upon completion of 827.02.

**827.02 Seminar in the History of the Islamic World II**

Continuation of 827.01.

**845 Seminar in East Asian History G 5**

Research topic to be announced. Bartholomew, Brown, Chang, and Chu.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**850 Seminar in History G 5**

Research topic to be announced.

Prereq: Written permission of grad chairperson. Repeatable to a maximum of 15 cr hrs.

**851 Seminar in Latin American History G 5**

Research topic to be announced. Andrien and Cooper.

Prereq: Permission of instructor. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**851.01 Seminar in Latin American History I**

This Course is Progress ("P") graded. Credit will be awarded upon completion of 851.02.

**851.02 Seminar in Latin American History II**

Continuation of 851.01.

**862 Seminar in Jewish History G 5**

Research topic to be announced. Each decimal subdivision is repeatable to a maximum of 10 cr hrs.

**862.01 Seminar in Jewish History I**

Berkowitz and Cohen.

This course is Progress ("P") graded. Credit will be awarded upon completion of 862.02.

**862.02 Seminar in Jewish History II**

Continuation of 862.01.

**867 Seminar in Early American History G 5**

Research topic to be announced. Cornell, Newell, and Pestana.

Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**867.01 Seminar in Early American History I**

This course is Progress ("P") graded. Credit will be awarded upon completion of 867.02.

**867.02 Seminar in Early American History II**

Continuation of 867.01.

**868 Seminar in 19th-Century American History G 5**

Each decimal subdivision repeatable to a maximum of 10 cr hrs. Research topic to be announced. Benedict, Roth, and Van Tine.

**868.01 Seminar in 19th Century American History I**

This course is Progress ("P") graded. Credit will be awarded upon completion of 868.02.

**868.02 Seminar in 19th Century American History II**

Continuation of 868.01.

**869 Seminar in 20th-Century American History G 5**

Research topic to be announced. Blackford, Burnham, Childs, Hogan, Kerr, Shaw, Stevenson, and Van Tine.

Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**869.01 Seminar in 20th Century American History I**

This course is Progress ("P") graded. Credit will be awarded upon completion of 869.02.

**869.02 Seminar in 20th Century American History II**

Continuation of 869.01.

**870 Seminar in Selected Topics in American History G 5**

Research topic to be announced. Blackford, Burnham, Childs, Hogan, Kerr, Shaw, Stevenson, and Van Tine.

Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**870.01 Seminar in Selected Topics in American History I**

Topics will include business, institutional, and public policy (Blackford, Childs, Kerr) constitutional (Benedict), cultural (Burnham), African-American (Shaw), urban (Stevenson), and labor history (Van Tine).

This course is Progress ("P") graded. Credit will be awarded upon completion of 870.02.

**870.02 Seminar in Selected Topics in American History II**

Continuation of 870.01.

**871 Seminar in American Diplomatic History G 5**

Prereq: Permission of instructor. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**871.01 Seminar in American Diplomatic History I**

Hahn and Hogan.

This course is Progress ("P") graded. Credit will be awarded upon completion of 871.02.

**871.02 Seminar in American Diplomatic History II**

Continuation of 871.01.

**873 Seminar in United States Military History G 5**

Millett.

Prereq: 668 or equiv. Repeatable to a maximum of 15 cr hrs.

**881 Seminar in Women's History G 5**

Research topic to be announced. Hartmann, Robertson, Rupp, and Shaw.

Prereq: Permission of instructor. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**881.01 Seminar in Women's History I**

This course is Progress ("P") graded. Credit will be awarded upon completion of 881.02.

**881.02 Seminar in Women's History II**

Continuation of 881.01.

**890 Topical Research Seminar I G 5**

Research topic to be announced.

Prereq: PhD standing or permission of instructor. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**890.01 Topical Research Seminar I**

A two-quarter seminar on topical themes.

This course is Progress ("P") graded. Credit will be awarded upon completion of 890.02.

**890.02 Topical Research Seminar II**

Continuation of 890.01.

**891 Topical Research Seminar G 5**

A one-quarter seminar on topical themes.

Prereq: Permission of instructor.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in pressing seminars on subjects of mutual interest; topics to be announced.

Repeatable by permission.

**999 Research in History G Arr**

Research for thesis or dissertation purposes only.

This course is graded S/U.

## History of Art

100 Hayes Hall, 108 North Oval Mall, 292-7481

**210 Art of the Ancient World U 5**

An investigation of the art of Western civilizations (Mesopotamia, Egypt, Greece, and the Roman and Byzantine empires) in its historical and cultural context.

Su, Au, Wi, Sp Qtrs. 5 cl. H210 (honors) may be available to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course. VPA Admis Cond course.

**211 Art of the Medieval and Renaissance Worlds U 5**

An investigation of medieval and Renaissance art in its historical and cultural context.

Su, Au, Wi, Sp Qtrs. 5 cl. H211 (honors) may be available to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course. VPA Admis Cond course.

**212 Art of the Modern World U 5**

An investigation of the art of Europe and America in its historical and cultural context from the 17th century to the present day.

Su, Au, Wi, Sp Qtrs. 5 cl. H212 (honors) may be available to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course. VPA Admis Cond course.

**213 Asian Art U 5**

A survey of Far Eastern art: India, China, and Japan. Andrews, J. Huntington, and S. Huntington.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 2nd yr standing or 1st yr standing with credit for 111, 210, 211, 212, 216, or 250. BER/GEC/LAR course.

**216 Introduction to African Art and Archaeology U 5**

The art and archaeology of Africa with emphasis on the historic cultures of the Rock Art (8,000 B.C.), Egypt (3000 B.C.), Nok (900 B.C.), Igbo-Ukwu (695 A.D.), Ife (1200 A.D.), and Benin (1400-1900 A.D.). Oditia.

Au, Sp Qtrs. 5 cl. BER/GEC/LAR course. VPA Admis Cond course.

**240 Classical Archaeology U 5**

Introduction to the principles, methods, and history of archaeological investigation in the ancient Greek and Roman world, illustrated through a selection of major classical sites.

Wi Qtr. 5 cl. Not open to students with credit for Classics 240 or History 240. Cross-listed in Classics and History. BER/GEC/LAR course.

**250 Great Monuments of Western Civilization U 5**

Major buildings of Western civilization from antiquity to the present in their historical and cultural contexts. J. Morganstern.

Not open to students with credit for Arch 201, or any course from Arch 301-305 sequence, or more than one course from Hist Art 210-212 sequence. BER/GEC/LAR course.

**260 Introduction to World Cinema U 5**

Chronological survey of the most influential and recognized film artists of the world.

Au Qtr. 2 3-hr cl. BER/GEC/LAR course.

**294 Group Studies U 2-5**

The investigation of particular problems in various fields of the history of art.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**300 Art of the World's Religions U 5**

The art traditions of the Jewish, Christian, Islamic, Buddhist, and Hindu religions as related to tenets of the religions.

5 cl.

**400 Women Artists of the Western World U 5**

A chronological, sociohistorical examination of women artists and their contribution to western art.

5 cl. Prereq: 212 or permission of instructor.

**415 Writing Seminar in the History of Art U 5**

Training in writing a variety of assignments commonly undertaken by art historians.

2 2-hr cl. Prereq: Jr or sr standing in hist art. GEC/LAR course.

**450 An Introduction to Artistic Media and Techniques U 5**

A survey of the major historical and contemporary artistic media and techniques.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: Hist art major or permission of instructor. Not open to BFA hist art majors.

**493 Individual Studies U 2-5**

Individual study in some field of historical development; designed to allow the student to work on a problem of particular interest.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**505 Contemporary African Art: 1920 to Present U G 5**

Survey of the development of 20th-century African art. Oditia.

5 cl. Prereq: 2nd yr standing. BER/GEC/LAR course.

**515 Renaissance Art in Italy U G 5**

A study of architecture, sculpture, and painting in Italy during the 14th, 15th, and 16th centuries. Melnikas.

5 cl. Prereq: 2nd yr standing. Not open to hist art majors. BER/LAC course.

**519 Great Masters of the 17th and 18th Centuries U G 5**

A study concentrating upon the individual careers of Caravaggio, Bernini, Rubens, Rembrandt, Velazquez, Poussin, Watteau, Tiepolo, and David. Haeger.

Prereq: 2nd yr standing. Not open to hist art majors or to students with credit for 631, 632, or 634. BER/GEC/LAR course.

**520 19th- and 20th-Century European Art U G 5**

European art from about 1800 to the present, with emphasis on the outstanding masters of painting and sculpture. Groseclose.

5 cl. Prereq: 2nd yr standing. Not open to hist art majors or to students with credit for 635 or 636. BER/GEC/LAR course.

**525 Medieval Art U G 5**

An introduction to the art and architecture of eastern and western Christendom from the 3rd to the 13th century. J. Morganstern and Verzar.

5 cl. Prereq: 2nd yr standing. Not open to hist art majors.

**530 American Art U G 5**

A study of architecture, painting, and sculpture in America. Groseclose.

5 cl. Prereq: 2nd yr standing. Not open to hist art majors or to students with credit for 637 or 638. BER/GEC/LAR course.

**550 Art of Paris U G 5**

Study of the painting, sculpture, buildings, and public and private spaces created in and for the people and the city of Paris. Herban.

Sp Qtr. 5 cl. Prereq: 2nd yr standing.

**576 The Arts of China U G 5**

An overview of the visual arts of China and their cultural context from prehistoric times to the modern era. Andrews and J. Huntington.

Sp Qtr. 5 cl. Prereq: Soph standing or permission of instructor. BER/GEC/LAR course.

**600 Introduction to Contemporary Art Historical Theory U G 5**

Exploration of new/theoretical paradigms in art history.

Wi Qtr. 2 2-hr cl.

**601 Architecture of the Ancient Orient U G 5**

Survey of architecture of southwest Asia and the Nile Valley from the fourth millennium B.C. to the fourth century B.C. Crane.

5 cl. Prereq: 210, or Arch 301, 302, 303, 304, or 305, or permission of instructor. Not open to students with credit for 621 or 661.

**602 Ancient Greek and Roman Architecture U G 5**

Survey of architecture and architectural decoration in the ancient Greek and Roman worlds (ca. 1000 B.C.-A.D. 350). Fullerton.

5 cl. Prereq: 210 or 10 cr hrs of ancient history or classics, or permission of instructor. Not open to students with credit for Arch 301.

**603 Architecture of the Middle Ages U G 5**

Major buildings of the early Christian, Byzantine, Carolingian, Romanesque, and Gothic periods. J. Morganstern.

Au Qtr. 5 cl. Prereq: 210 or 211; or Arch 301, 303, 304, or 305; or permission of instructor. Not open to students with credit for 650 or Arch 302.

**604 Renaissance Architecture U G 5**

Survey of 15th- and 16th-century architecture in western Europe.

5 cl. Prereq: 211; or Arch 301, 302, 303, 304, or 305; or permission of instructor.

**605 Baroque Architecture U G 5**

Survey of late 16th-, 17th-, and early 18th-century architecture in western Europe.

5 cl. Prereq: 212; or Arch 301, 302, 303, 304, or 305; or permission of instructor.

**606 American Architecture U G 5**

Survey of American architecture from the pre-colonial era to the present day.

5 cl. Prereq: 212; or Arch 301, 302, 303, 304, or 305; or permission of instructor.

**607 19th-Century European Architecture U G 5**

Survey of 19th-century European city planning; major architects and architectural styles; the revolution in building types and materials.

5 cl. Prereq: 212; or Arch 301, 302, 303, 304, or 305; or permission of instructor.

**610 African Art and Archaeology I U G 5**

A study of the art and culture of west Africa with emphasis on stylistic, historic, and archaeological implications. Odita.

5 cl. Prereq: 216 or permission of instructor.

**611 African Art and Archaeology II U G 5**

The study of the art and culture of central and southern Africa with emphasis on stylistic, historic, and archaeological implications. Odita.

5 cl. Prereq: 216 or permission of instructor.

**614 Comparative Study of African and European Art U G 5**

A critical study of the relationships between African and European art involving theory and practice. Odita.

5 cl. Prereq: Permission of instructor or jr standing.

**615 Contemporary Art of West Africa U G 5**

Painting and sculpture of Senegal, Sierra Leone, Liberia, Ivory Coast, Ghana, Dahomey, Nigeria, etc., focusing on history, style, and culture. Odita.

5 cl. Prereq: 216 or 505 or 610 or 614 or permission of instructor.

**616 Contemporary Art of Central Africa U G 5**

Painting and sculpture of Cameroons, Gabon, Republic of Congo, Zaire, Zambia, Sudan, Uganda, etc., focusing on history, style, and culture. Odita.

5 cl. Prereq: 216 or 505 or 610 or 614 or permission of instructor.

**617 Contemporary Art of East and Southern Africa U G 5**

Painting and sculpture of Ethiopia, Kenya, Tanzania, Mozambique, Southern Rhodesia, Malawi, South Africa, etc., focusing on history of style and culture. Odita.

5 cl. Prereq: 216 or 505 or 611 or 614 or permission of instructor.

**618 Contemporary Art of North Africa U G 5**

20th-century painting, sculpture, and tapestries of Morocco, Algeria, Libya, United Arab Republic, Mauritania, Mali, Niger, and Chad, focusing on history, style, and culture.

5 cl. Prereq: 216 or 505 or 610 or 611 or 614 or permission of instructor.

**621 Ancient Egyptian Art and Archaeology U G 5**

A specialized study of the architecture, sculpture, painting, and minor arts of ancient Egypt. Crane.

Wi Qtr. 5 cl. Prereq: 210 or equiv with permission of instructor.

**622 Art of Ancient Greece U G 5**

Survey of art in Greece from the early Iron Age to the end of the classical era (1100-323 B.C.). Fullerton.

5 cl. Prereq: Either 210, 10 cr hrs in classics, 10 cr hrs in ancient history, or permission of instructor.

**623 Hellenistic and Roman Art U G 5**

Survey of art in the Mediterranean Basin during the Hellenistic and Roman Imperial eras (323 B.C.-ca. A.D. 350). Fullerton.

5 cl. Prereq: Either 210, 10 cr hrs in classics, 10 cr hrs in ancient history, or permission of instructor. Not open to students with credit for 623.01 or 623.02.

**624\* Early Christian and Byzantine Art U G 5**

The Christian art of the Mediterranean region to the 8th century and the art of the Byzantine Empire to the 15th century. J. Morganstern.

Au Qtr. 5 cl. Prereq: 210 or permission of instructor.

**625\* Romanesque and Gothic Art U G 5**

The art of Western Europe from the Carolingian period to the 14th century. A. Morganstern, J. Morganstern, and Verzar.

5 cl. Prereq: 210 and 211 or permission of instructor.

**627 Northern Renaissance Art U G 5**

Art of the Low Countries, France and Germany from 1350 to 1550—with emphasis on Campin, Jan van Eyck, van der Weyden, van der Goes, Durer, Grunewald, Bosch, and Breughel. A. Morganstern.

Sp Qtr. 5 cl. Prereq: 211 or permission of instructor.

**628 Precursors to the Renaissance Art of Italy U G 5**

The establishment of Florentine and Sienese schools of painting during the 13th and 14th centuries as reflected in the works of Giotto and Simone Martini. Melnikas.

Au Qtr. 5 cl. Prereq: 211 or equiv with permission of instructor.

**629 15th-Century Italian Art U G 5**

A selective study of painting and sculpture of the Quattrocento. Melnikas.

Wi Qtr. 5 cl. Prereq: 211 or equiv with permission of instructor.

**630 16th-Century Italian Art U G 5**

A study of the major artists of the High Renaissance and Mannerist periods in Italy. Richardson.

Sp Qtr. 5 cl. Prereq: 211 or equiv with permission of instructor.

**630.01 Florentine and Roman Art of the 16th Century****630.02 Venetian and North Italian Art of the 16th Century****631 Baroque Art in Italy, France, and Spain U G 5**

Painting, sculpture, and architecture in Italy, France, Spain, 1590-1700. Richardson.

Au Qtr. 5 cl. Prereq: 212 or equiv with permission of instructor.

**632 Rubens and Rembrandt and Their Workshops U G 5**

Examination of the works of Rubens, Rembrandt and the artists they trained as a means of exploring significant issues in 17th-century Dutch and Flemish Art.

5 cl. Prereq: 212 or 519.

**633 Realism and Symbolism in Netherlandish Art U G 5**

Examination of the issues of interpretation and representation in context of paintings by artists such as Hals, Vermeer, de Hooch, Jan Steen, Ruisdael, and de Heem.

Sp Qtrs. 4 cl. Prereq: 212 or 519.

**634 Art of the 18th Century in Europe U G 5**

The development of architecture, painting, and sculpture from the late Baroque and Rococo to Historicism. Haeger.

5 cl. Prereq: 212 or equiv with permission of instructor.

**635 19th-Century European Art U G 5**

5 cl. Prereq: 212 or permission of instructor. Not open to students with credit for 635.

**635.01 19th-Century European Art, 1800-1848**

Neo-classical and Romantic art with emphasis on France, Great Britain, Germany, and Spain. Herban.

**635.02 19th-Century European Art, 1848-1896**

Realist, Impressionist, and Symbolist art in Europe and Great Britain, including developments in architecture. Ciszewycz and Herban.

**636 20th-Century European Art U G 5**

5 cl. Prereq: 212 or permission of instructor. Not open to students with credit for 636.

**636.01 20th-Century European Art, 1896-1914**

Matisse, Picasso, Art Nouveau, and the Style Moderne; a survey of the foundations of modern art (Expressionism, Cubism, Futurism, and Non-representational). Ciszewycz and Herban.

Sp Qtr.

**636.02 20th-Century European Art, 1914-1945**

Europe an art between the World Wars: Post-Cubism, Dada and Surrealism, Bauhaus and Constructivism, and abstraction. Ciszewycz.

**637 American Painting and Sculpture to 1900 U G 5**

History of painting and sculpture in America from colonial times to the end of the 19th century. Groseclose.

5 cl. Prereq: 212 or permission of instructor, and English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**638 Modern American Painting and Sculpture, 1900-1945 U G 5**

American painting and sculpture from 1900 to 1945. Groseclose.

5 cl. Prereq: 212 or permission of instructor, and English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**640 Contemporary Art since 1945 U G 5**

Visual arts of Europe and the United States from 1945 to the present. Groseclose.

Prereq: 212 or permission of instructor.

**644 Russian Art U G 5**

Russian art and architecture, beginning with the Byzantine influence on Muscovy to Soviet art today. Ciszewycz.

5 cl. Prereq: 211 or 212 or permission of instructor. Not open to students with credit for 236.

**645 Modern Russian Art U G 5**

Avant-garde movements in Russian art of the 19th and early 20th centuries. Ciszewycz.

Prereq: 212 or permission of instructor.

**646 Introduction to Film Theory U G 5**

Study of historically important theories of film art.

Au, Wi, Sp Qtrs. 2 3-hr cl. Prereq: 2nd yr standing. Not open to students with credit for Photog 500.

**647 Silent Cinema: 1895-1927 U G 5**

A study of development of silent film as an international art form.

Au, Wi, Sp Qtrs. 2 3-hr cl. Prereq: 2nd yr standing. Not open to students with credit for Photog 610.

**648 Classical Sound Cinema: 1927-1948 U G 5**

A study of the development of film as an art form from the advent of sound to WWII.

Au, Wi, Sp Qtrs. 2 3-hr cl. Prereq: 2nd yr standing. Not open to students with credit for Photog 612.

**649 Recent Cinema: 1948-Present U G 5**

A study of film as an art form since WWII.

Au, Wi, Sp Qtrs. 2 3-hr cl. Prereq: 2nd yr standing. Not open to students with credit for Photog 614.

**650 Avant-Garde and Documentary Cinema U G 5**

Generally chronological survey of significant contributions to documentary and avant-garde cinema.

Wi Qtr. 2 3-hr cl. Prereq: 2nd yr standing.

**651\* Romanesque and Gothic Sculpture U G 5**

Development of sculpture form the 11th through the 14th centuries, with emphasis on architectural programs, their contexts, iconography, and style. A. Morganstern and Verzar.

5 cl. Prereq: 210 or 211 or permission of instructor.

**652 Medieval and Renaissance Manuscript Illumination U G 5**

A chronological survey of medieval and Renaissance illuminated manuscripts in the West. Melnikas.

Sp Qtr. 5 cl. Prereq: 210 or 211 or permission of instructor.

**661\* Art and Archaeology of the Ancient Near East U G 5**

A specialized study of the art and archaeology of the ancient Near East focusing on the cultures of the Mesopotamian valley and surrounding areas. Crane.

5 cl. Prereq: 210 or equiv with permission of instructor.

**663 Early Islamic Art U G 5**

Introduction to the history of Islamic art and architecture from its formation through the classical age (i.e. from the 7th through the 13th centuries). Crane.

5 cl. Prereq: 210 or 211 or 213 or permission of instructor.

**664 Later Islamic Art U G 5**

Introduction to the history of Islamic art and architecture in the later period (14th through 18th centuries) including the Mongol, Timurid, Mamluk, Ottoman, Safavid, and Indo-Muslim art.

Au Qtr. 5 cl. Prereq: 210 or 211 or 213 or permission of instructor.

**670 Buddhist Art: Theory and History U G 5**

An analysis of Buddhism and its bearing on the art of India, Nepal, Tibet, China, and Japan. J. Huntington.

5 cl.

**671\* Art of India I U G 5**

Art and architecture of India from prehistoric times through the Gupta period, ca. 500 A.D. stressing relationship to religious and cultural developments. S. Huntington.

5 cl. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**672\* Art of India II U G 5**

Art and architecture of India from the Gupta period, ca. 500 A.D. to the Muslim period stressing relationship to religious and cultural developments. S. Huntington.

5 cl. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**673 Art of Central Asia U G 5**

An analysis of the cross currents of style and iconography that constitute the pre-Muslim art of Central Asia. J. Huntington.

5 cl.

**674 Art of Nepal and Tibet U G 5**

A study and analysis of the major aspects of style, iconography, and historical sequence as found in the arts of Nepal and Tibet. J. Huntington.

5 cl.

**675\* Art of India III U G 5**

A survey of architecture and painting after the Muslim conquest with emphasis on intermixture of indigenous and foreign styles. S. Huntington.

Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**676 Hindu Iconography U G 5**

A survey of Hindu iconography from a historical viewpoint emphasizing the development and meaning of specific deities. S. Huntington.

5 cl.

**677\* Chinese Art U G 5**

5 cl. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**677.01 Pre-Buddhist**

Examination of archaeological finds in China, ca. 4000 B.C. to the beginning of the 10th century A.D.; with emphasis on recent discoveries. J. Huntington.

**677.02 Buddhist**

Examination of the Buddhist arts of China; with emphasis on religious expression and content. J. Huntington.

**678\* Chinese Art: Painting U G 5**

5 cl. Prereq: 213 or permission of instructor. Fulfills in part the ASC LAR advanced English composition requirement. Not open to students with credit for 678.



**678.01 Chinese Painting to 1368**

A survey of Chinese painting from the Han period through the Yuan dynasty, with emphasis on style, subject matter, and cultural context. Andrews.

**678.02 Chinese Painting from 1368 to the Present**

A survey of Chinese painting from the Ming dynasty to the present, with emphasis on style, subject matter, and cultural context. Andrews.

**681\* Japanese Art: Proto-Historic and Buddhist U G 5**

Selected topics in the history of Japanese arts of the Proto-Historic period and the Buddhist religion. J. Huntington.

Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**682\* Japanese Art: Painting and Prints U G 5**

Selected topics in the history of Japanese pictorial art and related subjects. Andrews.

Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**690 Selected Topics U G 5**

Topics to be announced.

5 cl. Each decimal subdivision repeatable to a maximum of 15 cr hrs.

**690.01 Western Art****690.02 Asian and Non-Western Art****693 Individual Studies U G 2-5**

Advanced study for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****704 Studies in African Art and Archaeology U G 3-5**

Studies in African art emphasizing problem identification, concept organization, library research, and individual criticism. Odita.

Au Qtr. 3-5 cl. Prereq: 610 or 611 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**705 Studies in Contemporary African Art U G 3-5**

Introduction to research in 20th-century African art. Odita.

Au Qtr. Arr. Prereq: 505 or 615 or 616 or 617 or 618 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**710 Studies in Art Theory and Criticism U G 3-5**

Investigations of theories of art and their applications.

Not open to students with credit for 839. Repeatable to a maximum of 15 cr hrs.

**715 Historical Conceptual Bases of Art History U G 5**

Investigation of intellectual and historical foundations of modern art history.

Au Qtr. 2 2-hr cl or 4 cl. Prereq: 20 cr hrs in hist art.

**717 Studies in Medieval Art U G 3-5**

Selected problems in architecture, painting, sculpture, and the minor arts from the Early Christian through the Byzantine and Gothic periods. Melnikas, A. Morganstern, J. Morganstern, and Verzar.

Wi Qtr. Prereq: 624 or 625 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**718 Studies in Italian Renaissance Art U G 3-5**

Selected problems in painting, sculpture, and architecture of Italy in the 14th, 15th, and 16th centuries. Melnikas and Richardson.

Wi Qtr. 3-5 cl. Prereq: 515 or 629 or 630, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**720 Studies in Near Eastern Art and Archaeology U G 3-5**

Selected problems in the art and archaeology of the Near East. Crane.

Sp Qtr. Prereq: 621 or 661 or 663, or equiv with permission of instructor. Repeatable to a maximum of 15 cr hrs.

**722 Studies in Ancient Greek and Roman Art U G 3-5**

Selected problems in the art of Ancient Greece and Rome, 11th century B.C. to 4th century A.D. Fullerton.

3-5 cl. Prereq: 622 or 623 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**724 Studies in Northern Baroque Art U G 3-5**

Selected problems in the painting, sculpture, and architecture of Belgium, Holland, Germany, and France in the 17th and 18th centuries. Haeger.

3-5 cl. Prereq: 632. Repeatable to a maximum of 15 cr hrs.

**725 Studies in Italian Baroque Art U G 3-5**

Selected problems in the painting, sculpture, and architecture of the 17th century. Richardson.

Sp Qtr. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**726 Studies in Spanish Art U G 3-5**

Selected studies in the architecture, sculpture, painting, and minor arts of Spain. Richardson.

Wi Qtr. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**734 Studies in 18th Century European Art U G 5**

Selected problems in the painting, sculpture, architecture, graphic, and decorative arts of the 18th century in Europe.

1 4-hr cl or 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**737 Studies in Modern Art U G 3-5**

Selected studies in the art of the United States or modern Europe.

3-5 cl. Prereq: 635 or 636 or 637 or 638, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**745 Studies in Russian Art U G 3-5**

Selected problems in the painting, sculpture, and architecture of Russia. Ciszewycz.

Prereq: 645 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**747 Studies in Late Gothic and Northern Renaissance Art U G 3-5**

Selected problems in the art of the Low Countries, Germany, and France from the 14th through the 16th centuries. A. Morganstern.

3-5 cl. Prereq: 627 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**770 Studies in Buddhist Art U G 3-5**

Introduction to research in Buddhist art and iconography. J. Huntington.

3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**771 Studies in the Art of India U G 3-5**

Research problems in the art of India at an introductory level. S. Huntington.

Repeatable to a maximum of 35 cr hrs.

**774 Studies in Inner Asian Art U G 3-5**

Introduction to research in Inner Asian history of art. J. Huntington.

Prereq: 673 or 674 or 677 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**776 Studies in Chinese Art U G 3-5**

Introduction to research in Chinese art historical problems. Andrews and J. Huntington.

Prereq: 677 or 678 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**780 Studies in Japanese Art U G 3-5**

Introduction to research in Japanese art historical problems. Andrews and J. Huntington.

Prereq: 681 or 682 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of study arranged for each student, with individual conferences, reports, and honors thesis.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the hist art courses taken and with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA or BFA *with distinction* in hist art. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**793 Individual Studies U G 2-5**

Advanced study for students in specialized programs.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**804 Problems in African Art and Archaeology G 5**

Research techniques with emphasis on scholarly methods involving extensive search for available source materials on African art. Odita.

Au Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**805 Problems in Contemporary African Art G 5**

Advanced study and specialized research on major topical problems in 20th-century African art. Odita.

Au Qtr. 5 cl. Prereq: Two 600-level courses in contemporary African art or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**816 Museum Problems G 3-5**

An introduction to professional work in museums.

Repeatable to a maximum of 15 cr hrs.

**822 Problems in Ancient Art G 3-5**

Advanced study and specialized research on major topical problems in ancient art. Crane and Fullerton.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**824 Problems in Northern Baroque Art G 3-5**

Advanced study and specialized research on major topical problems in Northern Baroque Art.

Sp Qtr. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**832 Problems in American Art G 2-5**

Groseclose.

Wi Qtr. Prereq: Permission of instructor. Not open to students with a maximum of 15 cr hrs in 932. Repeatable to a maximum of 15 cr hrs.

**893 Individual Studies G 1-5**

Doctoral students may register for individual study in areas not normally covered by courses.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**917 Seminar in Medieval Art G 2-5**

A. Morganstern, J. Morganstern, and Verzar.

Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**920 Seminar in Italian Renaissance Art G 2-5**

Melnikas and Richardson.

Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**930 Seminar in Modern Art G 2-5**

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**970 Seminar in Buddhist Art G 3-5**

Advanced research in Buddhist iconographic problems. J. Huntington.

Prereq: Two of the following: 670, 671, 673, 677, 681, and 770; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**971 Seminar in the Art of India G 2-5**

Research problems in the art of India. S. Huntington.

Repeatable to a maximum of 35 cr hrs.

**976 Seminar in Chinese Art G 3-5**

Advanced studies in the history of Chinese art.

J. Andrews and J. Huntington.

Prereq: 677 or 678 or 776 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**980 Seminar in Japanese Art G 3-5**

Advanced studies in the history of Japanese art. J. Andrews and J. Huntington.

Prereq: 681 or 682 or 780 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**999 Research in History of Art G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Home Economics Education

347 Campbell Hall, 1787 Neil Avenue, 292-4487

**289 Introductory Field/Work Experience**

Directed observation-participation experiences in schools, and/or in extension or workplace settings related to teaching home economics.

Application for placement must be filed in dept the qtr preceding the experience. Registration one quarter prior to field experience. Open only to students enrolled in home economics teaching major and UVC home economics CAP code. Repeatable to a maximum of 10 cr hrs. These courses are graded S/U.

**289.01 Introductory Field Experience U 1-5**

\*Directed observation-participation experience in middle and/or secondary schools, or in extension. Redick.

Wi Qtr. Arr field experience; Wi Qtr. 1 hr cl. concur or after field experience.

**289.02 Home Economics Occupational Work Experience U 2**

Supervised and directed experience in a work setting related to home economics job training or consumer homemaking. Laster.

Wi Qtr. Arr. Prereq: Permission of instructor.

**290 The Profession of Home Economics U 2**

Scope of home economics as a field of study and as a profession.

Au Qtr. To be scheduled in the 1st or 2nd qtr of enrollment in HEC.

**294 Group Studies U 2, 3 or 5**

Selected topics in home economics education.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**340 Educative Process in Home Economics U 3**

Planning and organizing instructional materials and experiences for non-formal educational setting. Laster, Dohner or Loyd.

Au, Wi, Sp Qtrs. 2 1½-hr cl. Prereq: 3rd yr standing with 10 cr hrs in human ec major; Fm&Hu Dv 364 or equiv, Fm Res M 341.01 or equiv, and Psych 100 or 300. Not open to H Ec Edu teaching majors.

**341 Introduction to Home Economics Teaching U 3**

Participation in simulated teaching activities with emphasis on planning and on strategies. Dohner.

Sp Qtr. 1-2-hr cl, 1 3-hr lab. Prereq: Acceptance in H Ec Edu, 2nd yr standing, and prereq or concur: Psych 230.

**367 American Family Issues and Social Action U 5**

Development of writing, presentation, and oral discussion skills while critically examining family and related community issues and appropriate social action.

Au, Sp Qtrs. 1 1-hr cl, 2 2-hr cl. Prereq: English 110 or 111 or equiv; Polit Sc 101 or 300, or Sociol 101; and soph standing. GEC/LAR course.

**390 Human Ecology Foundations U 5**

The family in the human ecosystem, including human development, textile and clothing products, well-being of individuals and families, and management of resources.

Au, Wi Qtrs. 2 1½-hr cl, 2-hr recitation. Prereq: 3rd yr standing; Fm&Hu Dv 360 and 364, or Humn Ntr 310 or Txtl&Clo 272, 275, and 371, or Fm Res M 340 or 372.

**440 Vocational Home Economics Programs U 3**

Principles and procedures in developing and administering programs in vocational home economics with consideration of federal-state-local relationships. Laster or Loyd.

Au Qtr. 3 cl. Prereq: 341 or equiv, 3rd yr standing, and 2.50 CPHR.

**444 Program Planning in Home Economics Programs U 5**

Development of curriculum, instruction, management, evaluation, and other plans and responsibilities of home economics teacher. Laster.

Wi Qtr. 1 2-hr cl; 3 2-hr labs. Prereq: 341, 440 and 2.5 CPHR.

**446 Program Planning in Home Economics Related Occupations U 3**

Consideration of curriculum, instruction, evaluation, and other aspects of teaching in home economics related occupations. Loyd.

Su Qtr 1 2½-hr cl, arr hrs for observation and participation. Prereq: 440 and 2.50 CPHR. For vocational certification only.

**575 Vocational Home Economics Job Training Teaching**

Development of basic knowledge, skills, and attitudes required for vocational certification of new non-certified vocational home economics teachers.

Prereq: Current employment as a vocational teacher. Repeatable to a maximum of 24 cr hrs. These courses are graded S/U.

**575.01 Preservice Program U 8**

Su Qtr. 8 hrs/day for 20 days.

**575.02 Inservice I U 2**

Au Qtr. Prereq: 575.01 or ED P&L 575.01.

**575.03 Inservice II U 2**

Wi Qtr. Prereq: 575.02

**575.04 Inservice III U 2**

Sp Qtr. Prereq: 575.03

**575.05 Two Week Follow-up Program U 4**

The refinement of curriculum development, leadership, and human relations skills required by employed, one-year certified vocational teachers.

Su Qtr. 8 hrs/day for 10 days. Prereq: 575.04.

**575.06 Inservice IV U 2**

Au Qtr. Prereq: 575.05.

**575.07 Inservice V U 2**

Wi Qtr. Prereq: 575.06.

**575.08 Inservice VI U 2**

Sp Qtr. Prereq: 575.07.

**589 Field Experience**

Application for placement must be filed in dept the qtr preceding registration. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

**589.01 Home Economics Education U 1-5**

Directed participation in roles and responsibilities of the home economics teacher.

Au, Wi, Sp Qtrs: field exper, arr; Wi Qtr; 1 hr sem. Prereq: 341 and 3rd or 4th yr standing in home ec teaching major. This course is graded S/U.

**589.02 Home Economics Extension U 1-10**

Supervised participation in roles and responsibilities of the extension home economist. Redick.

Su, Au, Sp Qtrs. Arr. Prereq: 3rd or 4th yr standing in human ec and written permission of instructor.

**591 Supervised Home Economics Teaching U 5**

Supervised participation in the responsibilities and activities of the home economics teacher in the regular day school and extended school program.

Sp Qtr. (Au qtr by special permission only.) Full time for 1 qtr for 15 cr hrs. Prereq: 444 or 446, 589.01, 2.50 CPHR, and 4th yr standing.

**591.01 Designing Instructional Plans**

Concur: 591.02 and 591.03.

**591.02 Implementing Instructional Plans**

Concur: 591.01 and 591.03.

**591.03 Allied Professional Responsibilities**

Concur: 591.01 and 591.02.

**592 Communications in Human Ecology U 5**

Principles and practice of persuasive writing and speaking for public information, business, and professional roles; style and organization of technical reports and proposal writing emphasized.

Wi, Sp Qtrs. 1 1-hr cl, 2 2-hr cl. Prereq: English 110 or 111 equiv, H Ec Edu 367 or equiv, and word processing skills. GEC course.

**593 Individual Studies U 1-5**

Problems in various phases of home economics education.

Su, Au, Wi, Sp Qtrs. 1 or more conf. H593 (honors) may be available to students enrolled in college honors program or eligible for enrollment. Prereq: Completion of individual study plan form. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**595 Professional Development U 2**

The professional: role in society, career opportunities and goals, securing a position, performance, trends, professional involvement, and continuing development.

Au Qtr. 1 1 1/2-hr cl. Prereq: 3rd or 4th yr standing in h ec edu or journal. Not open to students with credit for Home Ec 595.

**597 International Family Issues U 5**

A practical problem-solving approach to the study of perennial family issues within the context of a given region of the world.

2 2 1/2-hr cl. Prereq: Sr standing. GEC/LAR course.

**597.01 Middle East**

Au, Wi Qtrs.

**597.02 Sub-Saharan Africa**

Au, Wi, Sp Qtrs.

**660 Entrepreneurship in Home Economics U G 3**

Application of knowledge to teaching entrepreneurship in home economics in secondary, adult, and higher education and/or formulating plans to become an entrepreneur using home economics skills. Gritzmacher.

Sp Qtr. 1 2 1/2-hr cl.

**694 Group Studies U G 2, 3 or 5**

Selected topics in home economics education.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****740 Trends in Home Economics G 3**

An overview of home economics at the elementary, secondary, higher education, and adult levels; general trends in enrollment, curriculum, supervision, administration, and research. Dohner or Burdette.

Sp Qtr. 1 2 1/2-hr cl. Graduate standing or permission of instructor.

**741 Curriculum in Home Economics G 3**

Critical analysis and development of curriculum in Home Economics in terms of philosophy, design, and adaptability. Laster or Redick.

Wi Qtr. 1 2 1/2-hr cl. Prereq: Graduate standing or permission of instructor.

**743 Research Methods in Home Economics G 3**

Nature of research in various areas of the field; criteria for setting up a research problem; techniques for collecting and analyzing data. Hull.

Au Qtr. 1 2 1/2-hr cl. Prereq: Graduate standing or permission of instructor.

**744 Evaluation in Home Economics G 3**

Principles of evaluation, framework for evaluation, procedures for appraising student progress in the attainment of objectives, construction of evaluation instruments, analysis and interpretation of evaluation data. Gritzmacher.

Au Qtr. 1 2 1/2-hr cl. Graduate standing or permission of instructor.

**745 Supervision in Home Economics Education G 3**

Principles, models, and processes of supervision in the context of student teaching and other settings where instruction in home economics takes place. Dohner.

Au Qtr. 1 2 1/2-hr cl. Graduate standing or permission of instructor.

**793 Individual Studies G 1-5**

Problems in various phases of home economics education.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Graduate standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**797 Interdepartmental Seminar G 2-4**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Graduate standing or permission of instructor. Repeatable by permission.

**842\* Home Economics in Higher Education G 3**

Present status and function of home economics at the higher education level; faculty involvement within a home economics unit and in the overall institutional setting. Dohner or Loyd.

Wi Qtr. 1 3-hr cl. Prereq: 740 or equiv with written permission of instructor.

**843 Seminar in Home Economics Education G 3 or 5**

1 2 1/2-hr cl. Repeatable to a maximum of 15 cr hrs.

**843.01 Home Economics Education Research.**

Wi Qtr. Prereq: 743 or equiv. Gritzmacher.

**843.02 Special Topics in Home Economics Education**

Topic to be announced.

**846 Home Economics Teaching Strategies and Learning Theory G 3**

Innovative use of teaching methods; relationship to learning theory. Laster.

Sp Qtr. 1 2 1/2-hr cl. Prereq: A course in educational psychology.

**860 Change Process in Vocational Education G 3**

Study of change principles, theories, and practice related to vocational, technical, and extension education.

Wi Qtr. 1 2 1/2-hr cl. Prereq: Professional experience or grad courses in vocational education.

**889 Internship G 1-15**

Guided participation to enhance professional competencies in selected areas.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing in home ec ed and permission of instructor. Repeatable to a maximum of 15 cr hrs in any combination of decimal subdivisions. A maximum of 10 cr hrs will apply toward master's degree requirements. Application with dept must be completed in qtr prior to qtr internship is to take place. Travel and subsistence costs must be borne by the student. These courses are graded S/U.

**889.01 Instruction****889.02 Extension****889.03 Business, Industry, or Communications****889.04 Administration or Supervision****894 Group Studies G 2, 3 or 5**

Selected topics in home economics education.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**899 Interdepartmental Seminar G 1-5**

See 797 Interdepartmental Seminars.

**942\* Administration in Home Economics G 3**

Principles, trends, problems, and evaluative criteria related to home economics units in higher education administrative structure; functions, responsibilities, and qualifications of home economics administrative personnel. Bailey.

Su Qtr. 1 3-hr cl. Prereq: MS degree in home ec.

**946\* Program Analysis and Design in Home Economics G 3**

Theoretical approach to program development; innovation and experimentation in program design in home economics at different levels; analysis and restructuring of existing programs; climate and strategies for change. Gritzmacher.

Sp Qtr. 1 2½-hr. Prereq: 846 or written permission of instructor.

**993 Individual Studies G 1-10**

Problems in various phases of home economics education chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Completion of plan for individual study form. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research: Thesis G Arr**

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research: Dissertation G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Honors, University

University Honors Center, 220 West 12th Avenue, 292-3135

**H296 University Honors Proseminar U 3-5**

Designed to foster an understanding of concepts, issues, and problems which transcend the boundaries of a single discipline; topic varies.

Au, Wi, Sp Qtrs. Arr. Prereq: Fresh or soph standing in an honors program and/or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H596 University Honors Seminar U 3-5**

Designed to foster appreciation, understanding and/or problem-solving skills related to concepts, issues, or problems that transcend the boundaries of a single discipline; topic varies.

Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in an honors program. Repeatable to a maximum of 15 hrs with permission of University Honors director.

## Horticulture

216 Howlett Hall, 2001 Fyffe Court, 292-0281

**150 Introduction to Horticulture U 4**

Guide to the applied practices associated with using and raising horticultural plants. Lagrimini.

Su, Wi Qtrs. 3 cl, 1 2-hr lab. Not open to students with credit for 111 or 202 or 203.

**154 Floral Design U 2**

Introduction to the basic floral design practices and concepts with emphasis on history, principles, forms, and mechanics of floral art.

Su, Sp Qtrs. 2 2-hr labs. Not open to students with credit for 424.

**210 Discovering Horticulture U 2**

Historical presentation of horticultural discoveries highlighting myths and legends, impact on societies, exploration, and contemporary issues.

Au, Sp Qtrs. 2 cl.

**232 Landscape Maintenance U 4**

Management of landscape plantings with special emphasis on transplanting, mulching, nutrition, pest control, pruning, physiological disorders, and diagnosing plant problems. Sydnor.

Wi Qtr. 2 2-hr cl.

**234 Landscape Plants U 5**

Identification, usage, and maintenance of landscape plants, including trees, shrubs, vines, groundcovers, ferns, grasses, annuals, and perennials. Biggs and Sydnor.

Au, Sp Qtrs. 2 2-hr cl, 1 2-hr lab. Not open to hort majors specializing in landscape horticulture or to students with credit for 231 and 233, 435, or 436.

**294 Group Studies U 1-5**

Special group studies in areas of landscape horticulture, fruit, vegetable, and florist crops.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**300 General Plant Biology U 5**

Plant structure and function; growth and development; diversity, reproduction, and evolution of lower and flowering plants; people, the biosphere, and plant diversity.

Au, Sp Qtrs. 3 cl, 2 2-hr labs. Prereq: Biology 101 or 113. Not open to students with credit for 201 or Plant Bio 101 or 300. Cross-listed in Plant Biology. BER/GEC/LAR course.

**310 Control of Horticultural Plant Development U 4**

Practices in horticulture as related to the physiological manipulation of horticultural crops directly or indirectly through modification of the environment. Scheerens.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 300.

**320 Plant Propagation: Manipulation of Plant Reproduction U 4**

Techniques, equipment, and facilities involved in sexual and asexual multiplication of plants. Struve and Jourdan.

Au, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: 300. Not open to students with credit for 415.

**430 Indoor Plants U 3**

The identification, maintenance, and use of plants for interior decoration in the home, office, public buildings, and related locations.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 300.

**431 Herbaceous Ornamental Plants U 5**

Identification, culture, and landscape use of bulbs, annuals, and herbaceous perennials. Still.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: 300.

**435 Deciduous Shade Trees and Narrowleaf Evergreens U 6**

Study of deciduous shade trees and narrow leaf evergreens including their identification, growth habits, ornamental features, environmental adaptation, utilization, and management in the landscape. Still.

Au Qtr. 4 cl, 2 2-hr labs. Prereq: 300. Not open to students with cr for 432.

**436 Deciduous Flowering Trees and Shrubs, Vines, and Broadleaf Evergreens U 6**

Study of deciduous flowering trees, flowering shrubs, vines, and broadleaf evergreens including their identification, growth habits, ornamental features, environmental adaptation, utilization, and management in the landscape. Still.

Sp Qtr. 4 cl, 2 2-hr labs. Prereq: 300. Not open to students with cr for 434.

**450\* Principles of Vegetable Crop Production U 5**

The production and utilization of vegetable crops with emphasis on environmental factors which influence growing and handling of these crops. Erb.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 300.

**461t\* Fruit Tree Physiology and Production U 5**

A study of the physiology and growth of woody perennial tree crops and the influence of environmental, cultural, and economic factors on fruit production efficiency. D. Miller.

Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 300.

**462\* Small Fruit Production and Viticulture U 3**

Physiology and growth of small fruit plants, including strawberries, blueberries, and grapes; and the influence of environmental, cultural, and economic factors on fruit production efficiency. D. Miller.

Au Qtr. Prereq: 300.

**489 Horticultural Industries Experience U 1**

Ten or more weeks of supervised practical experience in an approved horticultural enterprise.

Su, Au, Wi, Sp Qtrs. Open only to hort majors. Not open to students with credit for 489.01.

**494 Group Studies U 1-5**

Special group studies in areas of landscape horticulture, fruit, vegetable, and florist crops.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**509+\* Post-Harvest Physiology of Horticultural Crops U G 3**

The principles of post-harvest physiology, handling and storage of fruits, vegetables, flowers, and ornamentals. Knee.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: 310. Not open to students with credit for 609.

**521 Greenhouse Environment Control U G 5**

Principles and practices of greenhouse operation including construction, heating, cooling, light, temperature, ventilation, moisture, soils, and nutrition.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 300 and 320. Not open to students with credit for 621.

**522\* Commercial Production of Floriculture Crops U G 5**

Physiological principles and environmental factors involving photoperiod, thermoperiod, nutrition, moisture, soil, carbon dioxide, and chemical growth regulators involved in the commercial production of selected plants. Tayama.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 521. Not open to students with credit for 622.

**533 Management of Commercial Nursery Operations U G 5**

Detailed consideration of factors involving commercial nursery site selection, production, harvesting, and marketing of woody ornamentals and related products. Struve.

Wi Qtr. 4 cl, 3-hr lab. Prereq: 300 and 320. Not open to students with credit for 633. This course is available for EM credit.

**560 Computers in Horticulture Management U 4**

Develops an understanding of the applications of computer software to the areas of production planning, control, and electronic marketing for horticultural enterprises. Rhodus.

Wi Qtr. 2 2-hr cl, 1-hr lab.

**593 Individual Studies U 1-5**

Special studies in landscape horticulture, fruit, vegetable, and florist crops.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

**597 Issues in Biotechnology U 5**

Issues pertaining to the means and methods, products, prospects, safety, regulation, ethics, and societal effects of biotechnology. Lagrimini.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Biology 101 or 113, or Plnt Bio 101 or equiv; and sr standing. GEC/LAR course.

**600 Studies in Quality, Ethics, and the Global Environment U 5**

Principles and practices of contemporary horticultural management with emphasis in global environments, social responsibility, and company-wide quality. Rhodus.

Wi Qtr. 3 1 1/2-hr cl. Prereq: 489 or equiv, second writing course, and 10 hrs in hort at 400 level or above. GEC course.

**601\* Horticultural Plant Breeding U G 4**

Utilization of plant breeding methods and genetic principles for the improvement of fruit, vegetable, ornamental, and flower crops.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: Biol 113 or equiv.

**605+\* Advanced Vegetable Crops Production and Physiology U G 5**

A physiological study of the principal vegetable crops used for processing and fresh market; cultural practices are also considered. Gorski.

Wi Qtr. 5 cl. Prereq: 450. Not open to students with credit for 551 or 552.

**610\* Weed Control in Horticultural Crops U G 4**

A study of environmental and cultural factors which influence weed development in horticultural crops and a review of the principles of chemical and mechanical weed control. Gorski.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 300.

**615 Teaching Principles of Plant Science with Rapid Cycling Brassicas U G 2**

Hands-on approach to teaching science using live plants for demonstration and experimentation.

Su Qtr. Limited to current teachers or professional education students.

**615.01 Elementary Teachers**

Application of RCB to teaching general science.

2 2-hr cl and 1 4-hr lab. Prereq: Biology 101 and 102, or Plnt Bio 101, or Ohio elementary or middle school teachers of general science. Limited to 20 students who are current teachers or pre-professional education students. This is a 5-week course.

**615.02 High School Teachers**

Application of RCB to teaching biology and plant science courses.

2 2-hr cl and 1 4-hr lab. Prereq: Biology 101 and 102, or Plnt Bio 101, or Ohio high school teachers of life sciences. Limited to 20 students who are current teachers or pre-professional education students. This is a 5-week course.

**620 Plant Cell Transformation U G 3**

Principles of plant tissue culture as related to biotechnology and agronomic and horticultural crop improvement.

Au Qtr. 2 1 1/2-hr cl. Prereq: Mol Gen 500 and Plnt Bio 630, or equiv, or permission of instructor. Not open to students with credit for Agronomy 620. Cross-listed in Agronomy.

**631\* Arboriculture U G 5**

Environmental factors affecting plant growth and the planting, fertilization, pruning, cabling, and diagnosis of disorders in commercial arboriculture, city, forestry, park, and industrial grounds maintenance. Sydnor.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: 234 or 435, Plnt Bio 436, Entomol 460, Plnt Pth 401. Not open to students with credit for 731. This course is available for EM credit.

**H683 Honors Project U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H590.01, enrollment in honors program, and permission of honors supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

**694 Group Studies U G 1-5**

Special group studies in landscape horticulture, fruit, vegetable, and florist crops.

Au, Wi, Sp Qtrs. Prereq: Sr or grad standing. Repeatable to a maximum of 10 cr hrs.

**715\* Applications of Plant Cell, Tissue, and Organ Culture to Horticultural Research U G 5**

Laboratory methodology and physiological principles concerned with the in vitro culture of plant tissues and organs. Offered in alternate even years. Jourdan.

Wi Qtr. 2 cl, 1 4-hr lab. Prereq: Plnt Bio 630, 643, and permission of instructor. Offered in alternate even years.

**761 Secondary Products of Higher Plants U G 4**

The biochemistry of secondary products unique to higher plants with emphasis on phenolics, waxes, flavonoids, terpenoids, alkaloids, and related compounds. R. Miller.

Sp Qtr. 2 2-hr cl. Prereq: Biochem 511, Plnt Bio 631 or equiv.

**803 Research Principles and Techniques in Horticulture G**

The philosophy and components of graduate education with a development of the techniques useful in conducting research in the field of horticulture. Knee.

Au Qtr. 2 cl.

**804 Seminar G 1**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**813\* Advanced Plant Nutrition G 5**

Effects of plant nutrients on the growth and development of horticultural crops; emphasis will be placed on the physiological, bio-chemical, and anatomical responses of plants.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Plnt Bio 631 or equiv. Not open to students with credit for 811 or 812.

**814 Physiology of Horticultural Plants G 5**

The application of physiological concepts to horticultural plant situations; review of applicable literature.

Au Qtr. 5 cl. Prereq: Plnt Bio 630 and 631.

**815\* Post-Harvest Physiology G 3**

An in-depth review of the literature pertaining to the physiology and biochemistry of horticultural crops after harvest as influenced by various external and internal factors. Knee.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: Plnt Bio 630, 631 and Biochem 511 or equiv.

**892 Interdepartmental Seminar in Plant Physiology G 1**

Students will present seminars on their research or related topics in plant physiology and/or attend seminars by local and visiting researchers.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Not open to students with 12 cr hrs in Agronomy 892, Biochem 892, Fd Sc&Nu 892, or Plnt Bio 892. Repeatable to a maximum of 12 cr hrs, including cr hrs earned in Agronomy 892, Biochem 892, Fd Sc&Nu 892, and Plnt Bio 892. Cross-listed in Agronomy, Biochemistry, Food Science and Nutrition, and Plant Biology. This course is graded S/U.

**993 Individual Studies G 1-5**

Special studies in the fields of fruit, vegetable, florist crops, landscape horticulture, and processing and technology of fruits, vegetables, and related food products.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research Thesis or Dissertation G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Human Nutrition and Food Management

265 Campbell Hall, 1787 Neil Avenue, 292-4485

**210 The Science of Human Nutrition U 5**

Basic principles of biological science involving interactions between nutrients and physiological processes with emphasis on implications for human health.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Biology 101 or equiv. Not open to students with credit for 310. BER/GEC/LAR course.

**294 Group Studies U 2, 3 or 5**

Selected topics in human nutrition and food management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**310 Fundamentals of Human Nutrition U 5**

Nutrient and food energy needs of the human biological system throughout the life cycle with consideration of socio-psychological factors.

Au, Wi, Sp Qtrs. 5 cl. H310 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Biology 101, 110, 113 or equiv; Chem 101 or 121 and Chem 102 or 122. This course is available for EM credit.

**313 Food in Different Cultures U 3**

Food practices of selected peoples of the world with consideration of the existing social, cultural, and economic conditions.

Wi Qtr. 3 cl. Prereq: 10 cr hrs of social science.

**314 Fundamentals of Food U 5**

Application of chemical and physical principles to food preparation and use.

Wi Qtr. 3 cl, 2 2-hr lab. Prereq: 10 cr hrs of chem.

**350 Principles of Food Production U 5**

A study of food science and volume food service equipment as related to food production in quantity.

Au, Sp Qtrs. 3 cl, 3 hr lab. Prereq: Chem 101 and 102, or 121 and 122.

**370 Food Purchasing, Menu Planning, and Cost Control U 5**

A study of the impact of the menu, standardized recipe, forecast, and food purchasing on cost control and food quality. An overview of records related to cost control.

Au Qtr. 5 cl. Prereq: 350, hosp mgt or dietetics or h ec edu food service major, 2.0 CPHR.

**400 Beverage Management U 3**

Discussion of the varieties, merchandising, and management control of alcoholic and non-alcoholic beverages served in the hospitality industry.

Wi Qtr. 2 1 1/2-hr cl. Prereq: 370.

**406 Nutrition: The Life Cycle U 3**

Food and nutrient needs throughout various phases of the life cycle.

Sp Qtr. 3 cl. Prereq: 310. Not open to students with credit for 606.

**413 Food Management for Families U 3**

Nutritional, aesthetic, economic, and social aspects of planning, purchasing, preparing, and serving food to family groups at different income levels.

Wi Qtrs. 2 cl, 1 2-hr lab. Prereq: 310 and 314 or 350.

**450 Equipment, Layout, and Sanitation U 5**

A study of the principles of (a) equipment selection and layout design related to food production, assembly, service, and dishwashing or disposal; (b) design as related to the aesthetic qualities of dining and related areas; (c) sanitation as related to equipment selection, food production, food service, food storage, and food service regulations.

Wi Qtr. 5 cl. Prereq: 350, hosp mgt or dietetics or h ec edu food service major, 2.0 CPHR.

**451 Hospitality Facilities Management U 5**

Survey and management of infrastructural systems within hospitality properties; safety and emergency systems are also considered.

Sp Qtr. 2 2 1/2-hr cl. Prereq: 450.

**460 Personnel and Organization U 5**

Integration of principles of management and learning in the management of hospitality operations; emphasis on management of human resources.

Au Qtr. 5 cl. Prereq: 350, Bus-MHR 701.

**470 Food Quality Analysis and Control U 3**

Principles of sensory evaluation and the attributes of food quality as related to physical and chemical properties.

Au, Qtr. 2 cl, 2 hr lab. Prereq: 350, hosp mgt or dietetics or h ec edu food service major, 2.0 CPHR.

**480 Marketing and Merchandising U 5**

Application of the principles of marketing to the hospitality industries.

Wi Qtr. 5 cl. Prereq: Bus-Mktg 650.

**504 Principles of Education in Dietetics U 4**

Principles of education related to individuals and groups based on knowledge of nutrition, communication skills, recognition of socioeconomic influences, and familiarity with community resources.

Au Qtr. 2 2-hr cl. Prereq: 310 and 406.

**550 Hospitality Management: Introductory Internship U 5**

Planned experience under supervision, in various segments of the hospitality industry.

Su, Au, Wi, Sp Qtrs. Prereq: 350, 370, 460; Acctg 211; 2.00 CPHR, and permission of instructor. Internship application must be filed 2 qtrs in advance.

**560 Hotel Systems U 5**

Examines functions and procedures in hotels. Traditional and modern accounting systems-flow of data for sales, allowances, receivables, cash receipt, and disbursement. Housekeeping management and sanitation.

Au Qtr. 5 cl. Prereq: Acct&MIS 211, 212, Cptr/Inf 201 or 211.

**570 Hospitality Management: Advanced Internship U 12**

Planned experience in and entry-level supervisory role within the hospitality industry.

Su, Au, Wi, Sp Qtrs. Prereq: 550, permission of instructor, 4th yr standing, and 2.00 CPHR. Internship application must be filed in dept 2 qtrs in advance.

**580 Current Issues in the Hospitality Industry U 3**

Overview of regulations and current issues in the hospitality industries.

Wi, Sp Qtrs. Prereq: Sr standing and permission of instructor.

**589 Field Work U 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Sr standing in human ec; 2.25 CPHR; written permission of instructor; Acct&MIS 211; Econ 200; and Humn Ntr 350, 370, and 460. Registration 2 qtrs before scheduling. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**593 Individual Studies U 1-5**

Problems in various phases of human nutrition and food management chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. H593 (honors) may be available to students enrolled in college honors program or eligible for enrollment. Prereq: Minimum of 6 cr hrs in subject matter of problem with cumulative point-hour ratio of 2.70 or written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**595 Professional Development U 2**

Professionalism, ethics, and career alternatives in dietetics, food, or nutrition professions; professional organizations, continuing education, and development; skills to seek and obtain employment.

Au Qtr. 1 2-hr cl. Prereq: Jr standing in humn ntr or permission of instructor.

**601 Nutritional Concepts in Nursing Practice U G 3**

Consideration of the role of nutrition in preventive health care and various alterations in health with emphasis on the role of the nurse.

Au Qtr. 1 2 1/2-hr cl. Prereq: 310 or equiv and human physiology. Not open to students with credit for 612.01 or 612.02.

**610 Advanced Human Nutrition U G 5**

Interrelationships of nutrition and human biological functions.

Au Qtr. 5 cl. Prereq: 310, Biochem 211, and Zoology 232.

**612 Nutritional Therapy U G 3**

Current practices of nutritional therapy with emphasis on the biochemical and physiological rationale for dietary modifications.

Students required to take 612.01 and 612.02 in sequence. Open only to dept. majors, except by permission of instructor.

**612.01 Nutritional Therapy I**

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 610.

**612.02 Nutritional Therapy II**

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 612.01.

**615 Food Theory and Application U G 5**

Application of experimental methods to problems involved in preparation of foods.

Sp Qtr. 3 cl, 2 3-hr lab. Prereq: 350, Biochem 211, Chem 231 or 241 and 243.

**690 Workshop U G 4**

Full time for 3 wks. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**694 Group Studies U G 1-5**

Selected topics in human nutrition and food management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****704 Nutrition Programs and Services in the Community U G 3**

Exploration of food and nutrition programs emphasizing goals, target audiences, funding, legislation, and identification of community, state, and national programs.

Au Qtr. 3 cl, arr observation. Prereq: 310.

**705 Nutrition and Exercise U G 3**

Theoretical and applied framework for making dietary decisions for exercising populations.

Su Qtr. 2 cl, 3-hr lab. Prereq: Advanced coursework in nutrition, physiol and biochem and permission of instructor.

**706 Practicum in Nutrition and Exercise U G 1**

Development of practical skills employed in solving nutritional problems of exercising populations.

Su Qtr. 3-hr lab. Concur: 705.

**708 Nutrition of Persons with Developmental Disabilities U P G 3**

A problem-oriented approach to nutrition of the developmentally disabled population.

Su Qtr. 2 cl, 2 hrs lab. Prereq: 612.01 and 612.02 or equiv.

**710 Physiological Basis for Food Utilization U G 5**

Advanced concepts of human nutrition integrating physiological, biochemical, and nutritional functions relevant to food utilization.

Wi Qtr. 3 1 1/2-hr cl. Prereq: 610 or equiv.

**711 Nutrition: History U G 3**

Persons, discoveries, and methods in the evolution of nutrition as a science and a factor in the control of human welfare.

Au Qtr. 3 cl. Prereq: 610 or equiv.

**713\* Advanced Food Theory and Application U G 3**

Food theories applied to individual investigations in food preparation, preservation, and storage in the home and volume food service.

Su Qtr. 1 2-hr cl, 1 3-hr lab. Prereq: 615 or equiv.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Educational Services & Research, Family Relations and Human Development, Nursing, Physical Education, Psychology, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.

Wi Qtr. 1 3-hr cl. Not open to students with credit in 717.01 in any cross-listed areas.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su Qtr. 1 2-hr cl. Not open to students with credit in 717.02 in any cross-listed areas.

**730 Advanced Food Service Systems Management: Operational Integration U G 3**

Current practices and research in management of food service systems.

Sp Qtr. 1 2-hr cl. Prereq: 460.

**793 Individual Studies U G 2, 3, or 5**

Problems in various phases of human nutrition and food management chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**797 Interdepartmental Seminar U G 2-4**

Two or more departments may collaborate in presenting seminars in subjects of mutual interests; topics to be announced.

Repeatable to a maximum of 6 cr hrs and by permission.

**802 Seminar in Human Nutrition and Food Management G 3**

3 cl. Prereq: Advanced course work in seminar topic. Repeatable to a maximum of 15 cr hrs.

**802.01 Food Management**

Su Qtr.

**802.02\*\* Advanced topics in Human Nutrition and Food Management**

Su Qtr.

**802.03\* Food**

Wi Qtr.

**802.04 Human Nutrition**

Au Qtr.

**810 Nutritional Assessment G 3**

Evaluation of methods used to assess human nutritional status.

Sp Qtr. 2 cl, 3 hrs lab. Prereq: 710.

**816 Recent Developments in Food G 3**

Analysis of selected topics in food with application to current issues.

Wi Qtr. 1 2-hr cl. Prereq: 615 or equiv.

**830 Advanced Studies in Nutrition G 3**

Su, Au, Wi, Sp Qtrs. 3 or 4 cl. Prereq: 610 or Animl Sc 630 or Pltry Sc 630 or Animl Sc 631 or Dairy Sc 631 or Home Ec 610; Fd Sc&Nu 761 and 762 and 10 grad cr hrs in physiol. Not open to students with credit for Animl Sc 830, Dairy Sc 830 or Pltry Sc 830. Cross-listed in Animal Science, Dairy Science, Food Science and Nutrition, and Poultry Science.

**830.01 Energy**

Snook.

Wi Qtr.

**830.02 Minerals**

Mahan.

Au Qtr.

**830.03 Proteins and Amino Acids**

Sp Qtr.

**830.04 Vitamins**

Lilburn, Mitchell, and Smith.

Wi Qtr.

**830.05 Lipids**

Allred.

Sp Qtr.

**830.08 Carbohydrates**

Roehrig.

Au Qtr.

**832\*\* Recent Developments in Food Service Systems Management G 3 or 5**

Analysis of selected topics in food service systems management with application to current issues.

Su Qtr. 1 2-hr cl. Prereq: 460 and experience in food service management. Repeatable to a maximum of 15 cr hrs.

**894 Group Studies G 2, 3, or 5**

Selected topics in human nutrition and food management.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.



**895 Seminar G 1**

Presentations by students, faculty, and visiting scientists with critical discussion of issues in human nutrition.

Au, Wi Qtrs. Arr. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**898 Interdepartmental Seminar in Nutrition and Food Technology G 1**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

**993 Individual Studies G 2, 3, or 5**

Problems in various phases of human nutrition and food management chosen for individual study.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research: Thesis G Arr**

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research: Dissertation G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Humanities, College of

186 University Hall, 230 North Oval Mall, 292-1882

**294 Group Studies U 1-6**

Interdisciplinary study under the direct auspices of the College of Humanities involving materials of an interdepartmental or intercollegiate nature.

Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**694 Group Studies U G 1-6**

Interdisciplinary study under the direct auspices of the College of Humanities involving materials of an interdepartmental or intercollegiate nature.

Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

## Hungarian

232 Cunz Hall, 1841 Millikin Road, 292-6733

**101† Elementary Hungarian I****101.51 Individualized Track U 1-5**

Development of the four skills: listening comprehension, speaking, reading, and writing; introduction to Hungarian culture.

Not open to native speakers of this language through regular course enrollment or EM credit. Students register for and complete 1-5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

**102† Elementary Hungarian II****102.51 Individualized Track U 1-5**

Further development of the four skills: listening comprehension, speaking, reading, and writing, and more work on Hungarian culture.

Prereq: 5 cr hrs of 101.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.

**103† Intermediate Hungarian I****103.51 Individualized Track U 1-5**

Continuation of 102.51; development of listening comprehension, speaking, reading, and writing, with somewhat more emphasis on listening comprehension and reading.

Prereq: 5 cr hrs of 102.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Students register for and complete 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 104.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor.

**104† Intermediate Hungarian II****104.51 Individualized Track U 1-5**

Continuation of 103.51; development of the four skills with emphasis on listening comprehension and reading.

Prereq: 5 cr hrs of 103.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor.

**405† Advanced Hungarian I****405.51 Individualized Track U 1-5**

Continued development of the four basic skills with somewhat greater emphasis on vocabulary building and reading skills.

Prereq: 5 cr hrs of 104.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 104.51 and 405.51 concurrently with permission of instructor.

**407† Advanced Hungarian II****407.51 Individualized Track U 1-5**

Continuation of 405.51; further development of the four basic skills.

Su Qtr. Prereq: 5 cr hrs of 405.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

**580† Reading Hungarian I****580.51 Individualized Track U G 1-5**

Continuation of 407.51 with special emphasis on reading.

Arr. 5 cr hrs of 407.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 407.51 and 580.51 concurrently with permission of instructor.

**581† Reading Hungarian II****581.51 Individualized Track U G 1-5**

Reading for comprehension; unedited texts of moderate difficulty from contemporary newspapers and journals.

Arr. 5 cr hrs of 580.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.

## Industrial and Systems Engineering

210 Baker Systems Engineering Building, 1971 Neil Avenue, 292-6239

**311 Manufacturing Engineering U 3**

Fundamentals and interrelationships of the principal manufacturing processes; principles and characteristics illustrated with related laboratory demonstrations.

Au, Wi, Sp Qtrs. 2 1½-hr cl, 1 1-hr lab. Prereq: 2nd yr standing in engineer or written permission of instructor. Safety glasses must be worn in laboratory.

**406 Industrial Quality Control U 3**

Application of probability theory, statistics, and control theory to problems and product inspection and process control; economic evaluation of quality control techniques.

Wi Qtr. 2 cl. Prereq: 513.

**485 Practical Experience in an Industrial Organization U 2**

To be obtained in some engineering or industrial organization; prior adviser approval and final report required.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Majors in ind eng only. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**500 Introduction to Industrial and Systems Engineering U 1**

Introduction to the industrial engineering curriculum and to the profession; completion is required prior to beginning advanced portion of the major.

Au, Sp Qtrs. 1 cl. Prereq or concur: Acct&MIS 211, Chem 125, Econ 200, Eng Mech 430, Math 415 and 568, Physics 133, Psych 100, and Stat 426. Open to ind eng majors only.

**501 Work Systems Analysis and Measurement U G 4**

Analysis of work content; measurement of the performance of man-machine systems; establishment of standards for the evaluation of work; techniques of methods engineering; measurement of man-machine performance via charting techniques.

Au, Wi Qtrs. 2 1½-hr cl, 1 2-hr lab. Prereq: 500, Stat 426, or equivs.

- 502 Work Systems Planning and Evaluation U G 3**  
The evaluation and planning of man-machine systems experiments.  
Au, Wi Qtrs. 2 cl, 1 2-hr lab. Prereq: 500, Math 568, Stat 426, or equivs.
- 503 Work Physiology and Biomechanics in Work Design U G 3**  
Investigations of the physiological and biomechanical aspects of work design; anthropometry, biomechanical analysis, physio-control models, and work rest cycles applied to the workplace.  
Au, Sp Qtrs. 2 cl, 1 2-hr lab. Prereq: Stat 425 and 426, and jr standing in ind eng; or permission of chairperson.
- 504 Engineering Economic Analysis U G 3**  
Economic analysis of engineering projects and methods of operation; the analysis of public investments, and introduction to the analysis of engineering decisions.  
Au, Wi, Sp Qtrs. 3 cl. Prereq: 3rd yr standing or written permission of instructor; and a minimum cumulative pt-hr ratio of 2.00.
- 508 Industrial Practice in Systems Design U 3**  
An in-depth systems design project for industrial engineering.  
Prereq: 656, 658, English 305, and at least 20 additional hrs of ISE courses or written permission of chairperson. 2-qr sequence, must be taken in consecutive qtrs.
- 508.01 Industrial Practice in Systems Design I**  
Problem formulation, data collection, and exploration of design alternatives for an actual systems engineering problem.  
Au, Wi Qtrs. 2 2-hr cl. Prereq: 656, 658, English 305, and at least 20 additional hrs of ISE courses or written permission of chairperson. 2 qr sequence, must be taken in consecutive qtrs.
- 508.02 Industrial Practice in Systems Design II**  
Exploration and selection of design alternatives; justification, recommendation, and written and oral presentation of problems solution.  
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 508.01.
- 511 Introduction to Manufacturing Processes U G 3**  
Fundamentals and analysis of principal manufacturing processes and relationship between process variables and product properties.  
Au Qtr. 3 cl. Prereq: 311 recommended; Eng Mech 215 or 220 or 420 or 440.
- 513 Applied Waiting Line Analysis U 3**  
Analysis and design of stationary and non-stationary queueing systems: model formulation, approximation techniques, and adaptation of existing solutions.  
Au, Wi Qtrs. 2 1 1/2-hr cl. Prereq: 500 and Stat 425. Not open to students with credit for 613.
- 534 Principles of Industrial Engineering U G 4**  
A survey of operations methods used in industry including optimization, probability and statistics, waiting line models, quality control, simulation models, and scheduling methods.  
Au, Wi, Sp Qtrs. 4 cl. Prereq: 3rd yr standing or equiv with written permission of instructor. Not open to students in ind eng.
- 549 Introduction to Methods for Planning, Design, and Optimization of Industrial Systems U 3**  
Computer methods for planning of production and distribution systems; includes techniques for optimal resources allocation.  
Au, Wi Qtrs. 2 1 1/2-hr cl. Prereq: 500 and Math 568.
- 554 Introduction to Discrete System Simulation U 3**  
Introduction to the analysis of systems via discrete computer simulation models, generation of random variables.  
Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 513 and En Graph 143 or equiv.
- 573 Cognitive Engineering I U 3**  
Introduction to the design of person-machine systems, psychological aspects of human performance, and design of displays and controls; human-computer interaction; human information processing.  
Wi, Sp Qtrs. 2 cl, 1 2-hr lab. Prereq: Stat 425 and 526 and jr standing in ind eng or written permission of instructor. Not open to students with credit for 673.
- 603 Principles of Occupational Biomechanics and Industrial Ergonomics U G 3**  
In-depth treatment of occupational biomechanics and industrial ergonomics to provide transition to more advanced research-oriented topics.  
Au Qtr. 2 1/2-hr cl. Prereq: 503 or permission of instructor.
- 604 Advanced Engineering Economic Analysis U G 3**  
Theoretical foundations and advanced topics in economic analysis of engineering projects and operations; economic engineering decisions under certainty and uncertainty. Lundquist.  
Wi Qtr. 2 1 1/2-hr cl. Prereq: 504.
- 605 Machine Tool Control and Programming U G 4**  
Provides an introduction to numerically controlled machine tools including principles of operation, programming systems, computer assisted programming, performance characteristics, and applications.  
Sp Qtr. 2 1 1/2-hr cl, 2 2-hr labs. Prereq: 311 and 620.
- 607 Manufacturing Processes and Simulation U G 4**  
Introduction to advanced theory and simulation of manufacturing processes, including machining, casting, forming, and injection molding.  
Wi Qtr. 2 1 1/2-hr cl, 1 2-hr lab. Prereq: 511.
- 610 Planning of Engineering Experiments U G 3**  
Study of the planning of industrial and research experiments.  
Au Qtr. 2 1 1/2-hr cl. Prereq: 502 or written permission of instructor.
- 611 Metal Cutting Theory and Practice U G 4**  
Analysis and application of machining processes; topics include tool wear, cutting mechanics, heat, surface integrity, and properties of materials.  
Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 631 and Eng Mech 420, or equivs.
- 614 Automation U G 3**  
A survey of mechanization principles and current design practices involved in the automation of manufacturing operations and processes. Maul.  
Au, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 311 or equiv.
- 615 Automation Laboratory U G 1**  
Application of principles of mechanization to manufacturing operations and processes.  
Au, Sp Qtrs. Prereq or concur: 614.
- 620 Computer Application in Industrial Process Control U G 3**  
Provides an introduction to evaluation and design of practical industrial control systems with emphasis on real time computer control of discrete processes. Miller.  
Au, Sp Qtrs. 2 1-hr cl, 1 2-hr lab. Prereq: En Graph 200 or equiv and sr standing in ind eng or permission of instructor.
- 631 Tool Engineering U G 4**  
The design of tools, jigs, and fixtures; the basic elements of fixture design, such as form, locating points, clamping device, and the use of standardized parts.  
Wi Qtr. 2 cl, 4 lab hrs. Prereq: 311.
- 649 Quantitative Design Methods in Systems Engineering 1 U G 3**  
Model formulation and solution methods for system design problems with emphasis on matrix and vector space methods for static and dynamic systems. Miller.  
Au Qtr. 2 cl. Prereq: 549 or Math 471 or equiv and permission of instructor.
- 652 Analysis of Inventory Systems U G 3**  
Mathematical analysis applied to single stage inventory systems using both deterministic and probabilistic models.  
Wi, Sp Qtrs. 2 cl. Prereq: Stat 426 or equiv, and jr standing in ind eng or permission of chairperson.
- 653 Engineering Data Analysis U G 3**  
Graphical and other special techniques for estimating parameters and testing goodness of fit of non-normal distributions to engineering data.  
Sp Qtr. 2 1 1/2-hr cl. Prereq: 502 or written permission of instructor.
- 655 System Reliability and Availability U G 3**  
Prediction of system reliability and availability, life cycle costing, methods for analyzing system design concepts from the viewpoint of reliability and availability. Clark.  
Wi Qtr. 2 cl. Prereq: 436 or Stat 426 or 436 or permission of instructor. Offered every other yr in odd yrs.
- 656 Production Programming U G 4**  
Mathematical formulation and solution of problems of scheduling, inventory control, and logistics using linear programming methods. Reilly.  
Wi, Sp Qtrs. 4 cl. Prereq: 549, Math 568 or equiv, and jr standing in ind eng; or permission of chairperson. Not open to students with credit for 507.
- 658 Facilities Design for the Production System of the Future U G 3**  
Application of analytical techniques in the layout and design of production facilities including flexible manufacturing systems, robotized cells, and automatic storage/retrieval systems.  
Au, Sp Qtrs. 2 cl. Prereq: 656 and sr standing in ind eng; or permission of chairperson. Not open to students with credit for 506.
- 662 Introduction to Applied Decision Analysis U G 3**  
Introduction to decision analysis and its application; deals with modern utility theory and the application of this theory to engineering decisions under risk. Fraser.  
Au, Wi Qtrs. 2 cl. Prereq: 435 or Stat 425 or 435 or equiv with written permission of instructor.

**671 Industrial Accident Prevention and Control U G 3**

Industrial safety practices; OSHA; models of accident phenomena; measurement, inspection, and control of unsafe behavior and conditions; design of loss control programs. Student projects.

Wi Qtr. 2 cl. Prereq: 501 or equiv with written permission of instructor.

**672 Analysis and Design of Workplace Environments U G 4**

Measurement of environmental parameters including noise, heat, gases, particulates, and light, and their effect on human productivity; design of engineering controls; laboratory includes industrial surveys.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: 501 or equiv with written permission of instructor.

**673 Cognitive Engineering G 3**

Methodology for design of person-machine systems; psychological aspects of human performance; design of displays and control, human computer interactions, and human information processing. P. Smith.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: Stat 425 and 426, and jr standing in ind eng; or written permission of chairperson. Not open to students with credit for 573.

**680 Introduction to Integrated Production Control Systems U G 3**

Introduction to the design and analysis of integrated production control systems, including master scheduling, materials requirement planning, just-in-time systems, sequencing and scheduling.

Wi Qtr. 2 1/2-hr cl. Prereq: 652 and 656 or equiv.

**689 Senior Laboratory U 3**

Students pursue independent laboratory project of up to two quarters duration; proposals must be approved by a faculty member prior to registration for the course.

Prereq: Sr standing in ind eng. Repeatable to a maximum of 6 cr hrs.

**693 Individual Studies in Industrial Engineering U G 1-6**

Designed to give the advanced students an opportunity to pursue special studies not offered in fixed curricula.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**694 Group Studies in Industrial Engineering U G 1-6**

Advanced topics in the various phases of industrial engineering.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 23 cr hrs.

**700\* Empirical Model Building in Industrial Engineering U G 3**

Study of empirical problems in IE including the use of response surface methodology; topics include empirical strategies related to problems in manufacturing and human factors.

Wi Qtr. 2 1/2-hr cl. Prereq: 610 or Stat 641 or 645 or equiv. Not open to students with credit for 750.03.

**701\* Arbitration of Industrial Engineering Disputes U G 3**

Case studies in the arbitration of technical disputes involving incentive standards, job evaluation, crew size, line balancing, etc. G. Smith.

Wi Qtr. 2 cl. Prereq: 501 or 534 or equiv with written permission of instructor.

**702 Mathematical Programming: Linear G 3**

Convex and concave problems, global solutions, extreme point solutions, degeneracy, the Simplex methods, duality, complementary slackness, sensitivity analysis, parametric programming, and applications.

Au Qtr. 2 1/2-hr cl. Prereq: Math 568 or equiv with written permission of instructor. Not open to students with credit for 830.

**703 Stochastic Processes Used in Systems Engineering I G 3**

Introduction to modeling of stochastic systems, including Poisson processes and Markov chains.

Au Qtr. 2 1/2-hr cl. Prereq: Stat 425 or 521 or equiv. Not open to students with credit for 843.

**704 Introduction to Discrete System Simulation U G 3**

Introduction to the analysis of systems via discrete computer simulation models, generation of random variables. Clark.

Wi Qtr. 2 1/2-hr cl. Prereq: Stat 426, En Graph 143, Cptr/Inf 211 or equiv with permission of instructor. Not open to students with credit for 554 or 654.

**705 Robotic Applications in Manufacturing U G 3**

Aspects of computer based robots; applications of robots in advanced manufacturing systems; role of learning machines in process automation. Maul.

Wi Qtr. Prereq: 620 or written permission of instructor.

**711 Introduction to Metal Forming U G 3**

Metal forming processes, fundamentals of plastic deformation in metal forming; approximate analysis of metal forming processes.

Sp Qtr. 2 1/2-hr cl. Prereq: 607 or permission of instructor.

**718 Intermediate Occupational Biomechanics U G 3**

Biomechanics of connective tissues and the principles of rigid and deformable body mechanics for developing analysis tools for evaluating human operators within the work place.

Wi Qtr. 2 1/2-hr cl. Prereq: 603 or permission of instructor.

**719 Advanced Occupational Biomechanics U G 3**

Engineering principles of occupational biomechanics supplemented with biomechanical models of various industrial tasks.

Sp Qtr. 2 1/2-hr cl. Prereq: 718 or permission of instructor.

**720 Computer Applications in Manufacturing Systems U G 3**

Principles of digital computer utilization for the control of manufacturing processes and the design, planning, and control of manufacturing systems are presented. Miller.

Wi Qtr. 2 cl, 2 lab hrs. Prereq: 620.

**737 Proseminar in Cognitive Science U G 2**

An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Sp Qtr. 1 2-hr cl. Prereq: CIS 612, Linguistics 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in CIS, Linguistics, Philosophy, Psychology, and Speech and Hearing Science.

**740 Contract Research Management G 2**

Introduction to contract research; marketing and proposals; budgets, accounting, project and group management, quality, and ethics. Lundquist.

Au Qtr. 3 cl. Open only to graduate students in engineering or physical sciences. This course is graded S/U.

**750 Advanced Studies in Industrial Engineering U G 3**

Prereq: 4th yr standing and permission of instructor. Repeatable to a maximum of 24 cr hrs; subdivisions not repeatable. The student must register for specific classes in areas as indicated below, and may register for more than one at a time.

**750.04 Discrete-System Analysis and Control****750.11 Organization of Industrial Engineering Functions****750.12 Production Engineering****754 Simulation of Complex Systems U G 4**

Analysis of systems via continuous discrete and combined continuous-discrete simulation; continuous simulation of discrete-event processes; advanced discrete system simulation. Clark.

Wi Qtr. 2 2-hr cl. Prereq: 513 and 554 or 703 and 704.

**755 Analysis of Multi-Criteria Decisions U G 3**

Multiple criteria decision-making, multi-attribute decision theory, and linear multi-objective programming.

Sp Qtr. 2 cl. Prereq: 656 or equiv with written permission of instructor.

**758 Design, Analysis, and Control of Integrated Manufacturing Systems G 3**

A systematic description of traditional, cellular, and flexible configurations; an integrated view of interacting elements and their design, analysis, and control with examples from industry.

Sp Qtr. Prereq: Stat 425 and 426 or 525 or equiv.

**760 Basic Concepts of Systems Theory U G 3**

Study of formal concepts of systems theory including general models of systems, abstract dynamic systems, the concept of state, goal seeking, and decision making systems. Miller.

Wi Qtr. 2 cl. Prereq: 649 or equiv with written permission of instructor.

**772 Decision Analysis U G 3**

Introduction to Bayesian decision analysis and its applications. Fraser.

Sp Qtr. Prereq: 662. Not open to students with credit for 862.

**773 Cognitive Engineering: Human Interaction with Intelligent Systems U G 3**

Investigation of topics in cognitive engineering including techniques for aiding human performance, human expertise and human error, cognitive modeling of person-machine systems, and paradigms for human-computer interaction.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 573 and permission of instructor (undergraduates); 673 (graduates).

**774 Human-Computer Interaction in Complex Systems U G 3**

Design of human-computer interfaces for applications such as cockpits, process control rooms, space applications, and information retrieval; students will design an interface for an actual system.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 573 and permission of instructor (undergraduates); 673 (graduates).

**775 Cognitive Engineering Methods: Protocol Analysis and Knowledge Acquisition U G 3**

Class teaches the theory and practice of methods in cognitive engineering, including protocol analysis, knowledge elicitation for intelligent systems, and cognitive task analysis.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 573 and permission of instructor (undergraduates); 673 (graduates).

**802 Operations Research Models and Methods G 3**

Examines many basic OR models including the knapsack, traveling salesman, newsboy, and secretary problems; and random walk and queuing models, algorithmic concepts are discussed.

Wi Qtr. 2 1½-hr cl. Prereq: 702 and 703. Not open to students with credit for 842.

**810\* Product Development Analysis G 3**

Application of multivariate statistics to problems of industrial experimental planning and analysis; multiple responses, product profile analysis, multivariate quality control.

Au Qtr. 2 1½-hr cl. Prereq: 700 or equiv with written permission of instructor; Stat 645. Not open to students with credit for 836.

**811 Methods Engineering G 3-12**

Advanced work in one or more special phases of time study, motion study, job evaluation, wage analysis and payment systems, and speed and effort rating; the viewpoint of unions, and problems arising from labor-management relationships.

Au, Wi, Sp Qtrs. Prereq: 501 and 502 or equiv with written permission of instructor.

**812\* Product Development Experimentation G 3**

Application of linear statistical models to industrial engineering experimentation with emphasis on resource constrained investigations.

Au Qtr. 2 1½-hr cl. Prereq: 700 or equiv with written permission of instructor; Stat 645. Not open to students with credit for 835.

**814 Stochastic Processes Used in Systems Engineering II G 3**

Additional models of stochastic systems including Markov, renewal, and other stochastic processes.

Wi Qtr. 2 1½-hr cl. Prereq: 703.

**815 Estimation of System Parameters from Time Series Data G 3**

Estimation of parameter values for stochastic process models used in systems engineering, model identification and forecasting; single and multiple time series. Clark.

Au Qtr. 2 1½-hr cl. Prereq: 704 and 814.

**816 Advanced Queuing Theory G 3**

Mathematical analysis and design of waiting line systems emphasizing transient solutions, general arrival and service distributions, and priority queues and networks of queues.

Au Qtr. 2 1½-hr cl. Prereq: 814 or equiv. Not open to students with cr for 813.

**817 Advanced Seminar Cognitive Engineering G 3**

A dvanced seminar on contemporary topics dealing with engineering applications of cognitive psychology, artificial intelligence, and linguistics; topic areas include human-computer interactions, the design of information retrieval systems, and mental models of complex systems.

Au Qtr. 2 cl. Prereq: 673 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**818 Advanced Models in Human Factors Engineering G 3**

Advanced study in applied models used in human factors engineering; topics include models of human error, workload measurement and evaluation, risk acceptance, and performance under work paced and environmental stress.

Au Qtr. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**819 Advanced Topics in Biomedical Ergonomics G 3**

Advanced study of state of the art biomechanical evaluation methods applied to ergonomic problems; topics include hand tool evaluation, low back injury, electro-physiology, and anthropometry. Marras.

Wi Qtr. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**820 Human Error and the Human Contribution to System Failures G 3**

Psychology of human error and contribution of human error to disasters in high-risk systems.

Au Qtr. 2 1½-hr cl. Prereq: 673 or permission of instructor.

**821 Problems in Production Engineering G 3-12**

Advanced work in one or more phases of production engineering involving problems in production design, equipment planning, tool design, and quantity and quality control.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

**822 Seminar in Advanced Topics in Manufacturing G 3**

Seminar will feature speakers from industry; students will prepare reports and oral presentations on various topics. Altan.

Sp Qtr. 2 2¼-hr cl. Prereq: Admission to grad program or permission of instructor.

**824 Sequencing and Scheduling G 3**

Survey of sequencing/scheduling problems encountered in management systems emphasizing study of available solution techniques: algebraic, branch-and-bound, heuristics, network analyses, and linear/integer programming. Posner.

Sp Qtr. 2 1½-hr cl. Prereq: 702 or permission of instructor.

**828 Advanced Studies in Plant Design and Materials Handling G 3-12**

Advanced work in one or more special phases of plant design and materials handling, such as group technology and robotics.

Au, Wi, Sp Qtrs. Prereq: 658.

**831 Mathematical Programming: Nonlinear G 3**

Conv ex sets, convex functions, saddle point optimality criteria, the Fritz John and Kuhn-Tucker conditions, sensitivity and parametric results, applications, and an introduction to algorithms.

Wi Qtr. 2 cl. Prereq: 702.

**832 Mathematical Programming: Advanced Nonlinear G 3**

Wolfe/Falk duality, conjugate/geometric duality, applications of quality (e.g., geometric programming, quadratic programming, location problems, decomposition).

Sp Qtr. 2 cl. Prereq: 831.

**833 Optimization Methods for Large Systems G 3**

Methods for the solution of large optimization problems including decomposition, generalized linear programs, relaxation methods, and primal and dual hierarchical decompositions.

Sp Qtr. 2 cl. Prereq: 710 or 831 or equiv with written permission of instructor.

**834 Integer Optimization Methods G 3**

Methods used in the solution of applied optimization problems which contain integer variables. Content emphasizes general properties and use of common methods. Posner.

Au Qtr. 2 1½-hr cl. Prereq: 656 or 702 or Math 671 or equiv with written permission of instructor.

**837 Multilevel Systems Theory G 3**

Examination of the structure of hierarchical systems including problems of decomposition and co-ordination. Miller.

Sp Qtr. 2 cl. Prereq: 760 and permission of instructor.

**854 Advanced Simulation Design and Experimental Procedure G 3**

Variance reduction, experimental procedures, estimation of the variance at the time series average, comparison and ranking of alternatives, and response surface search methods.

Sp Qtr. 2 1½-hr cl. Prereq: 554 or 704.

**863 Dynamic Programming G 3**

Theory, methodology, and application of dynamic programming.

Sp Qtr. Prereq: 651 or 710 or equiv with permission of instructor.

**864 Optimization of Dynamic Systems G 3**

Study of theory and methodology for optimum control of dynamic systems (sequential decision systems); included are calculus of variations, Pontryagin Maximum Principle, and associated approaches. Miller.

Wi Qtr. 2 cl. Prereq: 649 or equiv with written permission of instructor.

**866 Programming and Control Research G 3-12**

Advanced work in the several phases of programming and control theory; consists primarily of application of mathematical methods to the formulation and solution of process programming and control problems. Miller.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

**871 Man-Machine Systems Research G 3-12**

Advanced work in special research topics in man-machine systems.

Au, Wi, Sp Qtrs. Prereq: 672 or 673. This course is graded S/U.

**881 Seminar in Industrial Engineering G 2**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**885 Practices in Operations Research G 3**

Appli cation of OR methods in manufacturing, financial, governmental, educational, and service organizations; students work on actual problems of a sponsoring organization and present both oral and written reports.

Sp Qtr. 2 1½-hr cl. Prereq: 802. Not open to students with credit for 844.

**893 Individual Studies G 1-6**

Designed to give advanced graduate students an opportunity to pursue special studies not offered in fixed curricula.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**894 Group Studies G 1-6**

Advanced topics in the various phases of industrial engineering.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs.

**900 Seminar in Operations Research G 3**

Seminar on research topics in Operations Research designed to prepare PhD students for dissertation research and research careers.

Au, Wi, Sp Qtrs. 2 1½-hr cl. Prereq: PhD standing or permission of instructor, other prereqs vary by topic. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in each decimal subdivision.

**900.01 Optimization****900.02 Probabilistic Models****900.03 Simulation and Experimentation****900.04 Decision Analysis****900.05 Systems Theory****999 Research in Industrial Engineering G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Industrial Design

380 Hopkins Hall, 128 North Oval Mall, 292-6746

**160 Introduction to Industrial Design U 3**

Introduction to the rationale of design and systematic design processes; an overview of the profession of industrial design; an introduction to the department's educational program.

Au, Wi Qtrs. 1 cl, 1 2½-hr cl. VPA Admis Cond course.

**199 Industrial Design: Visual Thinking and Problem Solving U 3**

Introduction to drawing and problem solving in the context of design; emphasis on materials, tools, and rapid visualization.

Au, Wi, Sp Qtrs. 2 2-hr labs.

**250 Studies in Industrial Design U 3**

Studies in specified areas in the field of industrial design, with emphasis on particular aspects of product, visual communication, and interior space design problems.

Au, Wi, Sp Qtrs. 2 2-hr labs. Prereq: Permission of instructor.

**251 Basic Industrial Design I U 5**

Introduction to the theories, methods, and practices of industrial design with primary emphasis on basic visual language and visual encoding practices.

Au Qtr. 3 3-hr labs. Prereq: Successful completion of English 110 or 111 or equiv, Ind Dsgn 160, Math 116, and the qualifying exam; and a cumulative pt-hr ratio of 2.00.

**252 Basic Industrial Design II U 5**

Application of three-dimensional organizational principles; introduction to visual logic, freehand perspective sketching systems, and basic three-dimensional modeling techniques and materials.

Wi Qtr. 3 3-hr labs. Prereq: 251 or permission of instructor.

**253 Basic Industrial Design III U 3****253.01 Industrial Design Practices**

A continuation of 252 with an introduction to three-dimensional structural principles and materials.

Sp Qtr. 3 2-hr labs. Prereq: 252; concur: 253.03; or permission of instructor.

**253.03 Industrial Design History**

A history of industrial design as affected by technology and other factors within the context of our culture.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 252; concur: 253.01; or permission of instructor.

**258 Basic Typography U 3**

Introduction to the knowledge and skills of typographical design and its corresponding aesthetic, functional, and technological applications and utilizations.

Sp Qtr. 1 2-hr cl, 2 2-hr labs. Open only to majors in ind dsgn and art educ or by permission of instructor.

**294 Group Studies in Industrial Design U 1-5**

The investigation of various problems in industrial design.

Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

**460 Intermediate Industrial Design I U 5**

Au Qtr. 3 3-hr labs. Prereq: 160, En Graph 121, 122, 204, or 206 (int dsgn major); Communic 105 or 110; Ind Dsgn 253.01, 253.03, 258, Math 116 or equiv (vis comm major); Photog 201 or elective; Stat 135 or 145 or similar course from approved GEC list; and acceptance resulting from portfolio review, or permission of chairperson.

**460.02 Visual Communication Design**

Design and application of graphic elements based on visual imagery in production of visual communications using photographic and handgraphic techniques within frameworks of theories of communication and signs.

**460.04 Product Design**

Design of simple products as a means of introducing systematic methods, sketching, model making, human factors, and presentation.

**460.08 Interior Space Design**

An introduction to conceptual planning, space organization, space requirements, and human factors, with emphasis on model making and presentation techniques.

**461 Intermediate Industrial Design II U 5**

Wi Qtr. 3 3-hr labs.

**461.02 Visual Communication Design**

Design and application of typographical elements in production of verbal communications using photographic, handgraphic, and computer techniques within frameworks of theories of communication and signs.

Prereq: 460.02 and 551.

**461.04 Product Design**

Emphasis is placed on the refinement of systematic design methods, visualization, detailing and documentation; students are introduced to team working and client requirements.

Prereq: 460.04 and 551.

**461.08 Interior Space Design**

Introduction to furniture design, exploring material and production characteristics, detailing and full-scale model making, emphasizing man-space-product interface, and special user requirements.

Prereq: 460.08 and 551.

**462 Intermediate Industrial Design III U 5**

Sp Qtr. 3 3-hr labs.

**462.02 Visual Communication Design**

Integration of typographic and graphic elements based on visual imagery in design and development of two-dimensional visual communications using photographic, handgraphic, and computer techniques.

Prereq: 461.02; concur: 555; or equiv with written permission of instructor.

**462.04 Product Design**

Developing of specialized problem solving approaches to more complex product designs which emphasize the refinement of solutions in terms of suitable technology and user consideration.

Prereq: 461.04; concur: 502 and 555; or equiv with written permission of instructor.

**462.08 Interior Space Design**

Design of specialized interior spaces, introducing space planning and design methodology; emphasis on user interaction and existing space and furniture system analysis.

Prereq: 461.08; concur: 522 and 555.

**501 Conceptual Drawing for Industrial Design U 3**

Principles of creative conceptual drawing and sketching methods used in the design process.

Au Qtr. 2 3-hr cl. Prereq: 253.01 and 253.03; En Graph 121 and 122; concur: 551 and 460.04 or 460.08; or written permission of instructor.

**502 Three Dimensional Design Graphics U 3**

Principles of graphic design for product and interior space design.

Wi Qtr. 2 3-hr cl. Prereq: 461.04 or 461.08, 501, and 552; and Photog 201.

**511 Visual Communication Hand Graphics U 3**

Advanced laboratory practice in communicating with drawn messages; evaluation and selection of appropriate visual treatments and techniques for medias of print, film, and television.

Au Qtr. 2 3-hr labs. Prereq: 253.01; concur: 460.02 and 551.

**514 Graphic Design Production U 3**

Fundamental information on the preparation, administration, and development of printed matter used by the visual communication designer.

Wi Qtr. 3 cl. Prereq: 258, 460.02, and 511; concur 461.02 and 552.

**521 Interior Drawing U G 3**

Principles and application of conceptual drawing techniques.

Au Qtr. 2 3-hr labs. Prereq: 253.01 and En Graph 122 or Arch 271.

**522 Interior Graphics U G 3**

Application and meaning of light, color, material structures, and surface textures; principles of spatial order systems, correlations and intercommunication of space components, forms, signs, styles.

Sp Qtr. 2 3-hr labs. Prereq: 253.01.

**523 Interior Space Modeling U G 3**

Principles and practices to represent spatial components and user interaction; communication and simulation of space in 2- and 3-dimensional form.

Wi Qtr. 2 3-hr labs. Prereq: 521 and 551, or permission of instructor.

**524 Interior Specification U G 3**

Overview and analysis of interior product systems, furniture line market surveys; interior specification and contracting.

Wi Qtr. 2 3-hr labs. Prereq: 4th yr standing in ind dsgn.

**551 Industrial Design Manufacturing Materials and Processes U 3**

Overview of the properties and fabrication principles for materials used in visual communication, interior space, and product design.

Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 460.02 or 460.04, and 501; or concur: 460.08 and 521.

**552 Industrial Design Communication Practices U 3**

An overview of communication methods, techniques, and procedures utilized in the various stages of the design process.

Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 460.02 or 460.04 or 460.08.

**554 Human and Environmental Systems Design U 3**

Overview of the social/behavioral/physical nature of humans and their interaction with the environment as interpreted by the industrial designer.

Au Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 462.02 or 462.04 or 462.08; and 555.

**555 Design Methodology U 3**

Introduction to and application of qualitative and quantitative methodology useful in a problem solving process.

Sp Qtr. 1 2-hr cl, 1 2-hr lab. Prereq or concur: 462.04 and 502; or 462.08 and 502; or 462.02; or written permission of instructor.

**656 Industrial Design Professional Practices U G 3**

Investigation of the administrative and legal aspects of the design profession contrasting the private firm with corporate and free-lance types of practice.

Sp Qtr. 1 2-hr cl, 1 1-hr cl. Prereq: 661.02 or 661.04; or 661.08 or grad standing in ind dsgn program.

**660 Advanced Industrial Design I U G 5**

Au Qtr. 3 3-hr labs.

**660.02 Visual Communication Design**

Integration of typographic and graphic elements based on visual imagery in design and development of three-dimensional visual imagery in design and development of three-dimensional visual communication solutions in packaging, exhibit design, or sign systems.

Prereq: 462.02, 551, 552, and 555.

**660.04 Product Design**

Design of products and product systems for complex functions; emphasis is on extending design consideration to include detailing, mock-ups, prototypes, testing and servicing.

Prereq: 462.04, 502, 551, and 555; Ceram En 423 or 424; English 305; and Ind Eng 311.

**660.08 Interior Space Design**

Design of complex interior spaces emphasizing psychological aspects of spatial components, referring to human performance and behavior, detail development and specification of space-creating products.

Prereq: 462.08, 522, 552, and 555; English 305; and 6 cr hrs in cer eng or ind eng.

**661 Advanced Industrial Design II U G 5**

Wi Qtr. 3 3-hr labs.

**661.02 Visual Communication Design**

Application of planning and analysis techniques in designing two- or three-dimensional visual communication systems; emphasis on application of visual communication research practices and methodology.

Prereq: 554 and 660.02.

**661.04 Product Design**

Introduction of field research experience and interdisciplinary expertise to the design of products and product systems.

Prereq: 554 and 660.04.

**661.08 Interior Space Design**

Design of public environments using an interdisciplinary team approach for conceptualization, documentation, and presentation, emphasizing environmental characteristics, and the physical and psychological functionalism of space.

Prereq: 554 and 660.08.

**662 Advanced Industrial Design III U G 5**

Sp Qtr. 3 3-hr labs.

**662.02 Visual Communication Design**

Individual student projects; students are to demonstrate their proficiency and grasp of previous subject matter in a project approved by the instructor; portfolio refinement.

Prereq: 661.02; concur: 656; or equiv with written permission of instructor.

**662.04 Product Design**

Product design thesis project; students are to demonstrate their proficiency and grasp of previous subject matter in a project approved by the instructor; portfolio development.

Prereq: 661.04; concur 656; or equiv with written permission of instructor.

**662.08 Interior Space Design**

Interior space thesis project; students are to demonstrate their proficiency, ability to evaluate and solve problems, comprehension for human needs and environmental concerns; portfolio development.

Prereq: 661.08; concur: 656; or equiv with written permission of instructor.

**671 Photo Graphics U G 3**

An experimental photo workshop in techniques of manipulating existing images to create new visual ideas, emphasizing individual exploration; discussions and critiques.

Sp Qtr. 2 2-hr labs. Prereq: 461.02 and 514; concur: 462.02 and 555.

**672† Advanced Typography for Industrial Design U G 3**

Advanced applications in typographic design emphasizing visual communication design principles and an introduction to computer-generated typography as practiced in the profession.

Au Qtr. 1 2-hr cl, 2 2-hr labs. Prereq: 258, 460.02, 511, and 551; concur: 461.02, 514 and 552. Repeatable to a maximum of 9 cr hrs.

**685 Field Work in Industrial Design U G 3-10**

Field application of industrial design in a capacity requiring a close working relationship with a professional environment.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**693 Individual Studies U G 2-5**

Advanced study for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**698† Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****750 3-D Computer Modeling Applications for Artists and Designers U G 5**

Advanced techniques and methods using 3-D geometric modeling application programs and techniques to design and synthesize 3-D forms.

Au Qtr. 2 2-hr cl; 1 2-hr lab. Prereq: Written permission of instructor.

**751 Advanced 3-D Computer Modeling Applications for Artists and Designers U G 5**

Illumination and shading application programs and techniques used by artists and designers to represent surface attributes, including color, texture, and reflectance for 3-D model visualizations.

Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 750 and written permission of instructor.

**752 3-D Computer Generated Visualization and Simulation Application for Artists and Designers U G 5**

Advanced topics in computer-generated motion application and script development used by artists and designers to create animating studies and emulations.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 751 and written permission of instructor.

**H783 Honors Research U 3-5**

A program of research and/or visual investigation for each student with individual conferences resulting in a honors thesis or honors project.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a pt-hr ratio of 3.50 in ind dsgn; permission of the instructor under whose supervision the work is to be completed and the College of the Arts Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

## 202 Industrial Design

### 785 Orientation to Graduate Studies in Industrial Design U G 4

Overview of current and future trends in industrial design; introduction to design research and communication methods; faculty interests and research; available resources; requirements of graduate level study.  
Au Qtr. 2 2-hr cl.

### 786 Design Research and Inquiry U G 4

Design as a mode of inquiry, including examination of communication process and models, and emphasizing general problem-solving as a goal-directed, value-laden activity.

Wi Qtr. 2 2-hr cl. Prereq: 785.

### 787 Industrial Design Planning, Development, and Evaluation U G 4

Preparation for graduate thesis and project courses with emphasis on concept formulation and evaluation based on communication models and other techniques of industrial design.

Sp Qtr. 2 2-hr cl. Prereq: 786.

### 788† Industrial Design Education G 3

A rationale and structure for industrial design education; emphasis on basic concepts; learning methods, education techniques, and writing instructional objectives.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing.

### 797 Interdepartmental Seminar U G 1-5

Interdisciplinary knowledge and problems examined and discussed in the context of shared concerns.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

### 894 Group Studies G 1-5

Group studies for students in specialized programs.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 950 Research Problems in Design G 3-5

Su, Au, Wi, Sp Qtrs. Repeatable to maximum of 45 cr hrs.

### 993 Individual Studies G 1-5

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

### 998 Research in Design: Thesis G Arr

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Internal Medicine

217 Means Hall, 1655 Upham Drive, 293-8724

### 661 Principles of Medicine P 2

A survey course in medicine to dental students considering the infectious, deficiency, and systemic diseases; representative diseases are selected for detailed consideration and demonstrations.

Wi Qtr. 2 cl. Prereq: Dent 4th yr standing. This course is graded S/U.

### 793 Individual Studies in Medicine P 6, 12, or 18 G 1-5

All months, 1 or more months to be elected. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. These courses are graded S/U.

Research on a minor problem under faculty supervision in the following specialties of medicine:

793.02 Cardiology

793.04 Endocrinology

793.08 Infectious Diseases

793.10 Pulmonary Diseases

793.12 Rheumatology

### 794 Group Studies in Medicine P 6, 12, or 18

Group studies of special topics in medicine.

Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

### 797 Interdepartmental Seminars P G 1-5

Wi Qtr. Prereq: Written permission of instructor. Repeatable by written permission of College Secretary. This course is graded S/U.

B— The Philosophy of Clinical Practice for Bio-Medical Engineers

### 850 Seminar in Medicine G 1-3

Discussion of pertinent literature and research projects in various subspecialty areas with emphasis on basic science concepts. Warren and staff.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. These courses are graded S/U.

### 850.01 Allergy

### 850.02 Cardiology

### 850.04 Endocrinology

### 999 Research in Medicine G Arr

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## International Studies

322 Oxley Hall, 1712 Neil Avenue, 292-9660

### 201 Introduction to Peace Studies U 5

The meanings of peace and peacelessness in today's world, varied approaches to peace, contributions of many disciplines and professionals, and the significance of peoples' movements.

Au, Wi, Sp Qtrs. 2 2-hr cl. BER/GEC/LAR course.

### 230 The Rise and Fall of the Soviet Union U 5

Survey of the birth, growth, decline, and death of communism in the Soviet Union: land, people, history, politics, social institutions, and culture; conducted by members of several departments.

Au, Wi Qtrs. 5 cl. BER/GEC/LAR course.

### 231 Introduction to Eastern Europe since World War II U 5

Survey of the land, people, history, politics, social institutions, literature, and arts of Eastern Europe since World War II.

Au, Wi Qtrs. 5 cl. BER/GEC/LAR course.

### 235 Introduction to China and Japan U 5

Interdepartmental survey of contemporary Asian civilization; geographic and racial background, historical and cultural heritage, social organizations, economic and political problems, and international relations.

Su, Sp Qtrs. 5 cl. BER/GEC/LAR course.

### 240 Introduction to Latin America U 5

Interdepartmental survey of Latin American societies, anthropology, economics, history, literature, geography, and agriculture.

Sp Qtr. 5 cl. BER/LAR course.

### 245 Introduction to the Modern Middle East U 5

Interdepartmental survey of the land, people, history, politics, religions, philosophy, social institutions, economic development, literature, and the arts, conducted by members of several departments.

Wi Qtr. 5 cl. BER/GEC/LAR course.

### 250 Introduction to Africa U 5

Interdepartmental survey of the land, people, history, politics, social institutions, economic development, literature, and the arts, conducted by members of several departments.

Su, Au, Wi, Sp Qtrs. 5 cl. BER/GEC/LAR course.

### 255 Introduction to Southeast Asia U 5

Interdisciplinary survey of Southeast Asia; geographic and historical background, linguistic and cultural heritage, and contemporary political and economic development.

5 cl.

### 294 Group Studies U 1-5

Groups of students are offered the opportunity to pursue the interdepartmental study of special topics.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

### 500 Conceptual Approaches to International Studies U 5

Exploration of classic and contemporary conceptual approaches to international studies used by anthropologists, economists, geographers, historians, political scientists, and psychologists.

Wi Qtr. 2 2-hr cl. Prereq: 15 cr hrs of course work in one or more relevant disciplines and permission of the instructor. Not open to students with credit for Comp Std 500. Cross-listed in Comparative Studies in the Humanities.

### 501 Selected Problems in International Studies U G 5

Class discussions, with several guest speakers, informal conferences, and a reading and research program arranged to meet the special needs of those enrolled.

Sp Qtr. 2 cl. Open only to int stds majors or students with equiv preparation.

### 597 Issues of the Contemporary World U 5

Prereq: Sr standing. GEC/LAR courses.

#### 597.01 Problems and Policies in World Population, Food, and Environment

Problems related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these problems, especially in low-income countries.

Au, Wi, Sp Qtrs. 2 1½-hr cl, 1 2-hr rec. Not open to students with credit for Agr Econ 597.01. Cross-listed in Agricultural Economics.



**597.02 Antarctic Marine Ecology and Policy**

Historical and contemporary evaluation of Antarctic resource management and its scientific basis.

Sp Qtr. 2 1½-hr cl. Not open to students with credit for Nat Res or Zoology 597.02. Cross-listed in Natural Resources and Zoology.

**601 Senior Seminar in Peace Studies U 5**

Advanced offering in the peace studies track, providing an opportunity to integrate multi-disciplinary course work and internship experience into a comprehensive overview of peace theory.

2 2-hr cl. Prereq: 201, Geog 200, 25 hrs from list of courses approved for peace studies in international studies.

**645 Contemporary Issues in the Middle East U G 5**

Intensive examination of contemporary issues in the Middle East by applying an interdisciplinary approach.

Sp Qtr. 2 2-hr cl. Prereq: 245 or jr standing.

**689 Student Intern Program in International Studies U 4-16**

Opportunity to gain knowledge of the policy process in an international or government agency.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing with at least a B average, and 25 cr hrs in a foreign language. Repeatable to a maximum of 15 cr hrs. Travel and subsistence costs to be borne by the student. This course is graded S/U.

**693 Individual Studies U G 1-10**

Designed to give able students an opportunity to pursue a special course of study not otherwise available to them.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. The course is graded S/U.

**694 Group Studies U G 3-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept. chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**717 Comparative Education U G 3**

Application of social science theories and methods to international issues of education.

Au Qtr. 1 2½-hr cl. Prereq: Sr standing and permission of instructor. Not open to students with credit for ED-P&L 717. Cross-listed in Educational Policy and Leadership.

**H783 Honors Research U 3-5**

Informal conferences to allow full scope of the initiative of the student; a special topic is assigned to each student; the results are tested by papers and a special examination.

Su, Au, Wi, Sp Qtrs. Prereq: Sr standing and 40 cr hrs in the social sciences including 15 cr hrs in courses acceptable for a major in int stds, with a grade of A in at least half of these major courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

## Italian

248 Cunz Hall, 1841 Millikin Road, 292-5842

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.

**101 Elementary Italian U 5**

Elements of Italian grammar with oral and written exercises; attention to ear training and oral practice; elementary reading based on Italian geography, history, and customs.

Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 100.02, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR course. FL Admis Cond course.

**102 Elementary Italian U 5**

The elements of Italian grammar with abundant oral and written exercises; development of conversational skill; reading, vocabulary building, attention to Italian idioms; modern Italian prose.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 101 or 100.02. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

**103 Intermediate Italian U 5**

Review of Italian grammar; reading of short stories and plays; increased attention to development of oral and written proficiency.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course.

**104 Intermediate Italian**

Prereq: 103 or 112. Not open to native speakers of this language through regular course enrollment or EM credit. The following courses are not open to students with credit for 104, and only one of the decimal subdivisions may be taken for credit. GEC/LAR courses.

**104.01 Basic Course U 5**

Intensive practice in oral and written Italian; reading of Italian short stories; grammar and idiom review; course conducted in Italian.

Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 104 or any other 104 decimal subdivision.

**104.02 Civilization U 5**

Aspects of Italian civilization; geography, history, social development, and the arts; readings and discussion in Italian.

Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 104 or any other 104 decimal subdivision.

**111 Intensive Intermediate Italian U 5 or 10**

Intensive course combining content of 103 and 104 to complete the presentation of basic Italian grammar and to provide extensive practice in language skills.

Sp Qtr. 5 2-hr cl. Prereq: 102 or equiv. Not open to students with credit for 104 or 104 decimal subdivisions, or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 or 112 may not register for more than 5 cr hrs. Course intended for students who wish to expedite completion of language requirement. GEC/LAR course.

**112 Intensive Italian U 5, 10, or 15**

Elementary and intermediate Italian; intensive drill in forms, syntax, vocabulary, and idiom; reading of short stories and plays in Italian.

Su Qtr. 15 cl. Enrollment limited to 20 students. Prereq: Permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, and 103. Students may not register for any other course if they enroll in 112. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in Italian will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. No audit. GEC/LAR course. FL Admis Cond course.

**151 Italian Literature in Cultural Context from the Middle Ages to the Renaissance U 5**

Introduction to social-cultural trends in Italy as reflected in literary texts and other materials from the beginnings to the Renaissance.

4 cl. Not open to students with credit for 150. BER/GEC/LAR course.

**152 Italian Literature in Cultural Context from the Renaissance to the Present U 5**

Introduction to social-cultural trends in Italy as reflected in literary texts and other materials from the Renaissance to the present.

4 cl. Not open to students with credit for 150. BER/GEC/LAR course.

**202 Italian Conversation and Composition U 5**

Intensive practice in spoken, idiomatic Italian, and composition based on materials concerning Italian life and culture.

Au Qtr. 5 cl. Prereq: 104 or permission of instructor.

**271+ Italian Renaissance Literature in Translation U 5**

Reading, analysis, and discussion of major works from Dante's Divine Comedy to those of High Renaissance authors such as Machiavelli and Castiglione.

Au Qtr. 4 or 5 cl. Prereq: English 110 or 111 or equiv. BER/LAC course.

**293 Individual Studies U 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**401+ Review Grammar and Composition U 3**

Review of Italian grammar; composition on assigned topics and practice in translation.

Wi Qtr. 3 cl. Prereq: 104 or permission of instructor.

**402 Intermediate Italian Conversation and Composition U 5**

Vocabulary building, practice in speaking Italian, and composition dealing with various aspects of present-day Italian life.

Au Qtr. 5 cl. Prereq: 104 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

**420 Thematic Approaches to Modern Italian Literature and Culture U 5**

Study of a major theme in modern Italian culture through analysis and discussion of literary texts, film, and opera; topic varies.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 104 or equiv. Repeatable to a maximum of 15 hrs. Conducted in Italian.

**602 Italian Translating U G 5**

Translation from Italian to English and English to Italian of texts from diverse sources; analysis of prose styles and conventions in the two languages.

Au, Wi, Sp Qtrs. 4 cl. Prereq: 10 or hrs of Italian beyond 104.

**603 Advanced Italian Conversation and Composition U G 5**

Intensive practice in speaking and writing, based on contemporary usage. Sp Qtr. 5 cl. Prereq: 401 or 402 or permission of instructor.

**604†\* Italian Phonology U G 5**

Description and analysis of the phonetic structure of modern Italian training in auditory and oral aspects of Italian pronunciation.

Au Qtr. 5 cl. Prereq: 401 or 402 or permission of instructor.

**621 Dante U G 5**

Introduction to the reading of the Divine Comedy; analysis of major episodes. Wi Qtr. 5 cl. Prereq: 10 or hrs at the 400 level or permission of instructor.

**622†\* Petrarch and Boccaccio U G 5**

Historical and aesthetic analysis of Petrarch's poetry; Petrarchism as a European phenomenon; literary background of Boccaccio's prose and verse; reading from the Decameron.

Wi Qtr. 5 cl. Prereq: 10 or hrs at the 400 level or permission of instructor.

**625 Italian Literature of the Renaissance U G 5**

Readings in works of representative authors of the 15th and 16th centuries such as Leonardo, Michelangelo, Castiglione, Machiavelli, Ariosto, and Tasso.

Sp Qtr. 4 or 5 cl. Prereq: 10 or hrs in Italian literature at the 400 level or permission of instructor.

**626†\* Italian Literature of the 17th and 18th Centuries U G 5**

Readings in selected works of Campanella, Marino, Galilei, Metastasio, Vico, Goldoni, Parini, and Alfieri.

Sp Qtr. 5 cl. Prereq: 10 or hrs in Italian literature at the 400 level or permission of instructor.

**627 Modern Italian Fiction U G 5**

Modern Italian fiction from 1800 to the present.

Au Qtr. 4 or 5 cl. Prereq: 10 or hrs at the 400 level or permission of instructor.

**628†\* Modern Italian Poetry and Drama U G 5**

Italian poetry and drama from 1800 to the present.

Au Qtr. 5 cl. Prereq: 10 or hrs in Italian literature at the 400 level or permission of instructor.

**693 Individual Studies U G 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs.

**722† Studies in Italian Literature: 14th Century U G 3**

Intensive study of one author, major work, or topic such as historiography, jocular poetry, the Vita Nova; reading in relevant criticism and scholarship. Sp Qtr. 3 cl. Prereq: Grad standing or by permission of instructor to srs majoring in Italian with credit for 621, 622, or equiv.

**725† Studies in Italian Literature: 15th and 16th Centuries U G 3**

Intensive study of one author, major work, or topic such as epic poetry, the Courtier, Poliziano; readings in relevant criticism and scholarship.

Au Qtr. 3 cl. Prereq: Grad standing or by permission of instructor to srs majoring in Italian with credit for 625 or equiv.

**726† Studies in Italian Literature: 17th and 18th Centuries U G 3**

Intensive study of one author, major work, or topic such as baroque poetry, Tassoni, Alfieri's theatre; readings in relevant criticism and scholarship.

Au Qtr. 3 cl. Prereq: Grad standing or by permission of instructor to srs majoring in Italian with credit for 626 or equiv.

**H783 Honors Research U 3-5**

A program of individual study for undergraduate honors students; includes individual conferences and reports; requires presentation and oral defense of an honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with at least a 3.50 cumulative pt-hr ratio in Italian; written permission of instructor under whose supervision the work is to be completed, and of the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

**792\* Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 or hrs with permission of dept.

**801†\* Teaching Italian at the College Level G 5**

Methods and techniques for teaching Italian language at the college level.

Au Qtr. Two wks intensive workshop previous to the beginning of qtr followed by a 2-hr wkly cl. Prereq: Teaching associate in the Dept of French and Italian or permission of instructor. Not open to students with credit for Ed-T&P 801.02. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs. Cross-listed in Educational Theory and Practice as 801.02.

**811†\* History of the Italian Language: Introduction G 5**

Basic concepts of historical linguistics; the major factors of change in the history of the Italian language from the Roman times to the present.

Wi Qtr. 4-5 cl. Prereq: MA candidates in Italian, others by permission of instructor.

**830 Seminar in Italian Linguistics G 5**

Detailed exploration of selected topics in Italian linguistics with extensive analysis of Italian language data relevant to the topic.

Au Qtr. 2-2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs.

**832† Seminar in Italian Literature G 2-5**

Wi Qtr. 2 or 5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs.

**833 Seminar in Italian Literature G 2-5**

Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs.

**885 Introduction to Methods in the History and Criticism of Literature G 5**

Selected readings in basic literary history, criticism, and theory, with practice in the use of standard bibliographical aids to scholarship.

Au Qtr. 4 or 5 cl.

**893 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

**894 Group Studies G 1-15**

Investigation of minor problems in the various fields of Italian literature and language.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 30 or hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 or hrs with permission of dept.

**999 Research in Italian Language or Literature G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Japanese

204 Cunz Hall, 1841 Millikin Road, 292-5816

**101 First Year Japanese I**

Elements of standard colloquial Japanese grammar, with intensive oral and written exercises; introduction to the Japanese writing system (*hiragana*, *katakana*, and *kanji*).

Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study of this language in high school, except by permission of dept. GEC/LAR courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Au Qtr. 5 cl. Students must register for and complete 5 or hrs during the qtr. This course is available for EM credit.

**101.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

**102 First Year Japanese II**

Continuation of 101.

Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses. FL Admis Cond course.

**102.01 Classroom Track U 5**

Wi Qtr. 5 cl. Prereq: 101 or 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

**103 First Year Japanese III**

Continuation of 102.

Not open to students with credit for 103; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

**103.01 Classroom Track U 5**

Sp Qtr. 5 cl. Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**103.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 104. Progress is sequential from one cr hr to the next with a demonstrated proficiency of 80% required for advancement to next level.

**104 Second Year Japanese I U 5**

Continuation of 103 with supplementary reading of selected graded texts.

Au Qtr. 5 cl. Prereq: 103 or 112 or equiv with written permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. This course available for EM credit. GEC/LAR course.

**110 Intensive First Year Japanese U 5, 10, or 15**

An introductory course with emphasis on basic structure taught through oral-aural drill; *hiragana, katakana, and a limited number of kanji*; equivalent to 101, 102, and 103.

Su Qtr. Prereq: Permission of instructor. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, 103. Not open to students with maximum allowable credit for 112. Students may not register for any other course if they enroll in 112. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 will enroll for 10 cr hrs. Students with no credit in Japanese will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. FL Admis Cond course. GEC/LAR course.

**205 Second Year Japanese II U 5**

Continuation of 104 with a shift in emphasis from the spoken to the written language; reading of selected graded texts, writing, and composition.

Wi Qtr. 5 cl. Prereq: 104 or equiv with written permission of instructor. This course is available for EM credit.

**206 Second Year Japanese III U 5**

Continuation of 205.

Sp Qtr. 5 cl. Prereq: 205 or equiv with written permission of instructor. This course is available for EM credit.

**210 Intensive Second Year Japanese I: Spoken U 5**

First course in the sequence of intensive Japanese courses; organized around a set of videotaped core conversations.

Au Qtr. 5 cl. Prereq: 103 or equiv, or permission of instructor; concur: 211. Not open to students with credit for 104, 111, or 205. Students must register for 210 and 211 concurrently.

**211 Intensive Second Year Japanese II: Written U 5**

Second course in the sequence of intensive Japanese courses; organized around *Reading Japanese* and a series of genre-specific samples of Japanese as it is written today.

Au Qtr. 5 cl. Prereq: 103 or equiv, or permission of instructor; concur: 210. Not open to students with credit for 104 or 205. Students must register for 210 and 211 concurrently.

**231 Elements of Japanese Culture U 5**

A survey of literature, art, religion, philosophy, and social institutions of the Japanese people from the earliest to the most recent times.

Su, Au, Wi, Sp Qtrs. 5 cl. Taught in English. BER/GEC/LAR course.

**251 Japanese Literature in Translation U 5**

Representative masterpieces from Japanese literature: fiction, drama, poetry, prose. Taught in English.

Au, Wi, Sp Qtrs. 5 cl. BER/GEC/LAR course.

**252 Modern Japanese Literature in Translation U 5**

Modern Japanese literature from late 19th century Western influences to contemporary writers; selected readings in English translation with emphasis on Tanizaki, Kawabata, and Mishima.

Wi, Sp Qtrs. 5 cl. BER/GEC/LAR course.

**293 Individual Studies U 1-5**

Individual investigation of problems in Japanese culture, language, and literature.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**310 Intensive Second-Third Year Japanese I: Spoken U 5**

Third course in the sequence of intensive intermediate Japanese courses; organized around a set of videotaped core conversations.

Wi Qtr. 5 cl. Prereq: 104 and permission of instructor, or 210. Not open to students with credit for 205. Students must register for 310 and 311 concurrently.

**311 Intensive Second-Third Year Japanese II: Written U 5**

Fourth course in the sequence of intensive intermediate Japanese courses; organized around a set of genre-specific samples of Japanese as it is written today and integrated with 310 in structure and vocabulary.

Wi Qtr. 5 cl. Prereq: 211 or equiv, or permission of instructor; concur: 310. Not open to students with credit for 205. Students must register for 310 and 311 concurrently.

**501 Japanese Literature in Critical Perspective U G 5**

Advanced survey in translation of masterpieces of Japanese literature and introduction to methods for the critical evaluation of the Japanese literary tradition.

Au, Wi, Sp Qtrs. 2 2 1/2-hr cl. Prereq: 251 or 252 or equiv, or permission of instructor. GEC/LAR course.

**507 Third Year Japanese I U G 5**

Readings in modern Japanese aiming at acquisition of control of the 1850 characters in common use; translation, composition, character drill.

Au Qtr. 5 cl. Prereq: 206 or equiv with written permission of instructor.

**508 Third Year Japanese II U G 5**

Continuation of 507; supplementary readings in short stories and standard reference works.

Wi Qtr. 5 cl. Prereq: 507 or equiv with written permission of instructor.

**509 Third Year Japanese III U G 5**

Continuation of 508.

Sp Qtr. 5 cl. Prereq: 508 or equiv with written permission of instructor.

**510 Intensive Third Year Japanese I: Spoken U G 5**

Fifth course in the sequence of intensive intermediate spoken Japanese; uses audio, video, and textual materials produced for native consumption.

Sp Qtr. 5 cl. Prereq: 311 or equiv, or permission of instructor; concur: 511. Students must register for 510 and 511 concurrently.

**511 Intensive Third Year Japanese II: Written U G 5**

Sixth course in the sequence of intensive intermediate written Japanese; moves from pedagogically planned texts to genres written today for native consumption.

Sp Qtr. 5 cl. Prereq: 510 or equiv, or permission of instructor; concur: 510. Students must register for 510 and 511 concurrently.

**514 Advanced Japanese Conversation U 3**

Lectures, discussion, reports; extensive use of taped materials including news broadcasts, drama, interviews, informal conversations; conducted entirely in Japanese.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 104 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

**601 Classical Japanese I U G 5**

Classical written language with emphasis on its structure; reading and analysis of selected pre-modern literary texts.

Au Qtr. 5 cl. Prereq: 509 or equiv.

**602 Classical Japanese II U G 5**

Continuation of 601.

Wi Qtr. 5 cl. Prereq: 601 or equiv.

**603 Classical Japanese III U G 5**

Continuation of 602.

Sp Qtr. 5 cl. Prereq: 602 or equiv.

**610 Fourth Year Japanese I U G 5**

Selected readings in modern literary, scholarly, and journalistic Japanese; essentially a language course intended to improve fluency.

Au Qtr. 5 cl. Prereq: 509 or permission of instructor. Not open to students with credit for 661.

**611 Fourth Year Japanese II U G 5**

Continuation of 610.

Wi Qtr. 5 cl. Prereq: 660 or permission of instructor. Not open to students with credit for 662.

**612 Fourth Year Japanese III U G 5**

Continuation of 611.

Sp Qtr. 5 cl. Prereq: 611 or permission of instructor. Not open to students with credit for 663.

**641 The Japanese Religious Tradition U G 5**

A survey of the Japanese tradition, including Shinto, Buddhism, Taoism, Neo-Confucianism, and folk religion from the 6th century B.C.E. to the present.

Wi Qtr. 2-2-hr cl. Prereq: Permission of instructor. Not open to students with credit for Rel Stds 641. Cross-listed in Religious Studies.

**654\* Japanese Literature: Classical Period U G 5**

Survey of Japanese literature from the eighth to the mid-fourteenth century: myths, court poetry, tales, fiction, diaries, and miscellanies.

Au Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.

**655\* Japanese Literature: Medieval and Edo Periods U G 5**

Survey of Japanese literature from the mid-fourteenth to the mid-nineteenth century: popular tales, poetry, drama, and the fiction of the merchant class.

Wi Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.

**656\* Japanese Literature: Modern Period U G 5**

Survey of Japanese poetry, fiction, and drama from the 19th century to the present.

Sp Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.

**680 Introduction to Japanese Linguistics U G 5**

An introduction to the phonology, syntax, and lexicon of the Japanese language.

Au Qtr. Prereq: 103 or 103.01 or 5 cr hrs of 103.51, and Linguist 601; or permission of instructor.

**681 History of the Japanese Language U G 5**

A survey of the development of the Japanese language from early times to the present.

Sp Qtr. Prereq: 103 or 103.01 or 5 cr hrs of 103.51, and Linguist 601; or permission of instructor.

**693 Individual Studies U G 1-5**

Requires the use of Japanese sources and the completion of a paper reflecting the student's research.

Su, Au, Wi, Sp Qtrs. Prereq: 509 or 603, and written permission of instructor. Repeatable to a maximum of 15 cr hrs. Not a substitute for regular language courses. This course is graded S/U.

**694 Group Studies U G 1-5**

Investigation of minor problems in Japanese language and literature.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. Not a substitute for regular language courses.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****751\* Studies in Japanese Poetry U G 5**

Critical studies in Japanese poetry; survey of poetic forms, techniques, and aesthetics; concentration on a specific collection, poet, or coterie; topic varies.

Au Qtr. 5 cl. Prereq: 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**752\* Studies in Japanese Prose Literature U G 5**History and critical study of myths, early tales, diaries, chronicles, *setsuwa*, miscellanies, medieval tales, Edo fiction, or the modern novel; topic varies. Wi Qtr. 5 cl. Prereq: 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.**753\* Studies in Japanese Drama U G 5**

History and texts of Japan's dramatic literature; no, kyogen, kowaka-mai, bunraku, kabuki, shinsei shimpa, shingeki, rakugo; topic varies.

Sp Qtr. 5 cl. Prereq: 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**782\* Japanese Phonology U G 3**

An analysis of the phonological structure of present-day Japanese with a critical examination of traditional and contemporary works on Japanese phonology.

Sp Qtr. 3 cl. Prereq: 680, 681, or permission of instructor.

**H783 Honors Research U 3-5**

A program of reading arranged for each student, with individual conferences, reports, and honor thesis.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a record of A in at least half of the Japanese courses taken and an average of B in all courses; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Open only to candidates for BA in Japanese. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**784 Japanese Syntax U G 5**

Survey of the grammatical structures of Japanese; presentation of syntactic rules.

Au Wi, Sp Qtrs. 5 cl. Prereq: 680 or permission of instructor.

**786 Japanese Pragmatics U G 5**

Introduction to pragmatic aspects of the Japanese language.

Wi Qtr. 2-2-hr cl. Prereq: 680 or Linguist 601 or permission of instructor.

**788 Japanese Language Acquisition U G 5**

Survey of Japanese language acquisition studies.

Au, W, Sp Qtrs. 2-2-hr cl. Prereq: 680 or permission of instructor.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**800 Japanese Bibliography and Research Methods G 3**

Problems and procedures in the use of Japanese bibliographies and other reference materials.

Au Qtr. 3 cl. Prereq: 509 or permission of instructor.

**801 Teaching Japanese at the College Level G 5**

Methods and techniques of teaching college-level Japanese, selection and preparation of teaching, testing, and laboratory materials; observation of a variety of language classes.

Au Qtr. Two wks intensive workshop previous to qtr followed by 2-hr wkly cl. Prereq: Permission of instructor. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs.

**877 Topics and Problems in Japanese Literature G 3-5**

Readings in the major genres of Japanese literature with emphasis on analysis and critical evaluation.

Sp Qtr. 3 cl. Prereq: 603 or 663, and written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**879 Seminar in Japanese Literature G 3-5**

Au, Wi, Sp Qtrs. Prereq: 603 or 663, and written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**887 Topics and Problems in Japanese Linguistics G 3-5**

A detailed investigation of specific problems in the phonological, syntactical, and lexical analysis of the Japanese language.

Sp Qtr. Prereq: 206 and 680. Repeatable to a maximum of 25 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**998 Research in Japanese: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Japanese: Dissertation G 1-18**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 99 cr hrs. This course is graded S/U.

## Jewish Studies

344 Dulles Hall, 230 West 17th Avenue, 292-0967

### 201 Introduction to Jewish Studies U 5

An introduction to the historical, ideological, and cultural growth of Judaism examined from a variety of methodological perspectives.

Wi Qtr. 2 2-hr cl. BER/GEC/LAR course.

### 294 Group Studies U 1-5

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 498 Study Tour U 1-15

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Su Qtr. Prereq: Permission of instructor. Repeatable for differently titled study tours.

### 694 Group Studies U G 1-5

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

## Journalism

211 Journalism Building, 242 West 18th Avenue, 292-6291

### 101 Introduction to Mass Communication U 3

Introduction to the mass media in America, especially newspapers and broadcasting; analysis of forces and institutions affecting media behavior, and the resulting quality of performance.

Au, Wi, Sp Qtrs. 3 cl. Prereq: English 110 or 111 or equiv. SS Adms Cond course.

### 201 Basic Reporting and Newswriting U 4

Reporting and writing news and features for the print and electronic media. Su, Au, Wi, Sp Qtrs. 4 2-hr cl. Prereq: 101; typing ability required.

### 202 Advanced Reporting and Newswriting U 3

Continuation of 201 with emphasis on more complicated reporting and news writing.

Su, Au, Wi, Sp Qtrs. 1 cl, 2 2-hr labs. Prereq: 201 and enrollment in journal or permission of instructor.

### 222 Reporting and Newswriting for Broadcast U 3

Reporting and writing in broadcast news writing style; emphasis on gathering information for delivery through written communication meant to be heard rather than read.

Au, Wi, Sp Qtrs. 1 cl, 2 2-hr labs. Prereq: 201 and enrollment in journal or permission of instructor.

### 303 Photojournalism U 3

Reporting the news with a camera; how to recognize, develop, and create picture stories; experience in coordinating words and news pictures; picture editing; layout.

Au, Wi, Sp Qtrs. 2 cl, 1 2-hr lab. Prereq: 201 or permission of instructor.

### 304 Editing U 3

Editing of copy, headline writing, rewriting, and general copy desk work.

Au, Wi, Sp Qtrs. 2 cl, 2-hr lab. Prereq: 202. VDT operation.

### 311 Graphics of Communication U 4

An introduction to visual and graphic communication in the print media, involving perception, typography, picture editing, and basic design skills.

Au, Wi, Sp Qtrs. 2 cl, 2 2-hr labs. Prereq: 201 and enrollment in journal or permission of instructor.

### 412 Reporting and Writing for Television U 3

Reporting and editing for the news film medium, writing for the news film and newscast; practice in television news production and newscasting.

2 2-hr cl, lab hr arr. Prereq: 222.

### 421 Journalism Laboratory—News Editorial U 3

Reporting, editing, and photojournalism, primarily for the *Lantern*.

Su, Au, Wi, Sp Qtrs. No more than a total of 9 cr hrs may be earned in any combination of decimal subdivisions of 421 and 422; subdivisions not repeatable. Students taking these courses are required to return to campus prior to the start of classes each qtr.

#### 421.01 Reporting

Prereq: 202.

#### 421.02 Editing

Prereq: 304.

#### 421.03 Photojournalism

Prereq: 303 and permission of instructor.

### 422 Radio and Television News Laboratory U 3

Reporting and editing news primarily for radio and television programs.

Au, Wi, Sp Qtrs. No more than a total of 9 cr hrs may be earned in any combination of decimal subdivisions of 421 and 422; subdivisions not repeatable.

#### 422.03 Television

Prereq: 412.

### 431 Public Relations Principles U 3

Origin and development of public relations, including ethical standards and functional role in modern society; basic principles of public relations theory, philosophy, and operation.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Jr or sr standing.

### 432 Case Studies in Public Relations U 3

Specific case studies designed for internal and external audiences; organization, administration of programs and departments; analysis of techniques, channels, media, and applicable research methods.

3 cl. Prereq: 431.

### 481 Principles of Advertising U 4

Advertising in a free market society; its role, history, legal, and other restraints; social and economic impacts; agency operation and role of the media in advertising.

2 2-hr cl. Prereq: 201 and enrollment in journal or permission of instructor.

### 482 Advertising Copywriting U 4

Introduction to advertising copywriting; theory and practice in the writing and editing of advertising copy; study of copy testing and research methods; legal considerations and ethical problems.

Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: 481 or permission of instructor; 311 recommended.

### 489 Journalism Field Experience U 3

An out-of-class supervised field experience for advanced journalism majors.

These courses are graded S/U.

#### 489.01 Advertising

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 481, 482, and permission of instructor.

#### 489.02 Radio-Television

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing and permission of instructor. Repeatable to a maximum of 6 cr hrs.

#### 489.05 Public Relations Internship

Au, Wi, Sp Qtrs. Arr. Prereq: 202 and 431, or permission of instructor.

### 494 Group Studies U 1-5

Regular class meetings and group discussion of specified problems.

Su, Au, Wi, Sp Qtrs. Prereq: Soph standing or above. Repeatable to a maximum of 15 cr hrs.

### 533 Applied Public Relations Principles U 3

Application of principles and theory to specific public relations problems.

Au, Wi, Sp Qtrs. 3 cl. Prereq or concur: 489.05.

### 571 Basic Journalism for Beginning Graduate Students G 5

Introduction to gathering facts and writing news stories for the media, with attention given to substantive reporting at the local level; libel and fair play.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: Grad standing and permission of instructor. Credit does not apply to the minimum hrs required for grad study in journal.

### 602 Magazine Writing U G 3

Non-fiction writing for magazines, commercial and industrial; emphasis on the non-technical full-length magazine article.

3 cl. Prereq: 202 or permission of instructor.

### 605 Development of the Mass Media in America U G 4

Major currents and trends basic in the shaping of the mass media; famous personalities, foundations, and evolution of a free, responsible press.

Au, Wi, Sp Qtrs. 4 cl. H605 (honors) may be available to students enrolled in an program or by permission of instructor. Prereq: Jr, sr, or grad standing in journal; or permission of instructor.

### 607 Law of the Press, Radio, and Television U G 4

History, principles, and provisions of the law of libel, slander, copyright, and other statutes affecting newspapers, other publications, and broadcasting.

Au, Wi, Sp Qtrs. 4 cl. H607 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: Jr or sr or grad standing in journal; or permission of instructor.

### 609 Mass Media Science Reporting U G 3

Emphasis on information gathering and writing skills appropriate to communicating science to nonscientists; analysis of the state of the art of science reporting in U.S. mass media.

1 3-hr cl. Prereq: 201 or permission of instructor.

**611 Newspaper Design U G 3**

Application of design techniques to the modern newspaper, emphasis on analysis of contemporary newspaper format and its evolution.

1 3-hr cl. Prereq: 311 or permission of instructor.

**614 Supervision of Journalism in Secondary Schools U G 3**

Designed for journalism teachers in secondary schools and advisers; editorial, advertising, circulation, mechanical production, and publishing phases of school newspapers, magazines, and annuals.

Su Qtr. 1 cl. Prereq: Jr or sr or grad standing.

**622 Reporting Public Affairs for Radio and Television U G 3**

Instruction and practice in reporting the news of government, the courts, politics, education, finance, intergovernmental relations, political public opinion, and urban affairs.

2 2-hr cl, lab arr. Prereq: 422.03.

**623 Writing of Reviews and Criticisms U G 3**

Study of the work of the dramatic and literary critic, especially on newspapers and magazines; practice in writing reviews and criticisms.

Prereq: Jr or sr or grad standing or permission of instructor.

**624 Editorial Page U G 3**

Study of the purpose, form, style, and spirit of the editorial; consideration of current events, practice in news interpretation, and other editorial writing.

3 1-hr cl. Prereq: Journal 4th yr standing or permission of instructor.

**625 Investigative Reporting U G 3**

Intensive reporting and writing.

1 3-hr cl, conf arr. Prereq: Journal 4th yr standing or permission of instructor.

**626 Media Management U G 3**

Exploration of the specific functions and problems of the media manager; study of the structure of newspapers and broadcast stations.

3 cl. Prereq: Journal 4th yr standing or permission of instructor.

**627 Advanced Editing U G 3**

Advanced theory and practice in news selection, preparation and display for newspaper, magazine, broadcast and photojournalism media; emphasis on the responsibility of the journalist.

Au, Wi, Sp Qtrs. Prereq: Journal 3rd yr standing and written permission of instructor.

**627.01 News-Editorial****627.02 Radio-Television****634 Writing for Public Relations Projects U G 3**

Writing and editing for public relations projects; identifying special audiences and tailoring material to their interests; writing for broadcast and print, in-house, and mass media.

2 2-hr cl. Prereq: 202 and 431 or permission of instructor.

**635 Public Relations Management and Strategy Development U G 3**

Application of management techniques to public relations; public relations strategy; campaign development.

1 3-hr cl, arr consultations. Prereq: 431 and sr standing; or permission of instructor.

**636 Public Relations in Associations and Development Programs U G 3**

A systematic exploration of the literature applicable to important subfields of public relations; practical application projects.

2 2-hr cl. Prereq: 431 or sr or grad standing, or permission of instructor.

**641 Reporting Public Affairs U G 3**

Instruction and practice in reporting the news of government, the courts, politics, education, finance, intergovernmental relations, political public opinion, and urban affairs.

Au, Wi, Sp Qtrs. 2 cl, 1 2-hr lab. Prereq: 421.01 or 422.03 and sr or grad standing in journal.

**642 Mass Media, Society, and Basic Issues U G 4**

Analysis of the basic issues affecting news performance, especially ethics, news management, government control, gatekeeping, and monopoly; assessment of the effects of the resulting performance.

Au, Wi, Sp Qtrs. 4 cl. Prereq: Sr or grad standing; or permission of instructor.

**643 International Communications and the World Press U G 4**

Examination of international news communication systems and selected media concepts and the role they play in the political, economic, and cultural environments.

3 cl. Prereq: Jr or sr or grad standing or permission of instructor.

**648 Cartooning in American Journalism U G 3**

A study of the history of cartooning and its role in society and American journalism; an analysis of the power of cartoons as a popular communication medium.

2 1½-hr cl. Prereq: Journal major or permission of instructor.

**651 Mass Media Research and Theory U G 4**

An overview of methods and findings of research in mass communications; instruction in the techniques of surveying public opinion, experimentation, and content analysis.

4 cl. Prereq: Jr or sr or grad standing or permission of instructor.

**661 Soviet System of Mass Communications U G 4**

Theory, organization, structure, and practice of the Soviet mass media in their historical as well as contemporary perspectives.

2 2-hr cl.

**681 Advertising Media Planning U G 4**

Problems in planning and selecting advertising media; examination of how advertisers plan, evaluate, and use media to reach specific audiences.

Prereq: 481 and jr standing.

**682 Advertising Campaigns U G 4**

Planning and executing advertising campaigns; integration of advertising theory and techniques into a complete campaign, including oral presentation.

1 3-hr cl, 1 1-hr cl. Prereq: 482 and 681, or permission of instructor. Not open to students with credit for 694C Au Qtr 1989 or Wi Qtr 1990.

**693 Individual Studies U G 1-5**

Students make extensive and significant studies in the field of journalism.

Su, Au, Wi, Sp Qtrs. Prereq: Journal 4th yr standing and permission of director, or grad standing and permission of instructor. No more than 5 cr hrs for undergrad and 6 cr hrs for grad students may be earned in any combination of decimal subdivisions. These courses are graded S/U.

**693.01 News-Editorial****693.02 Radio and Television****693.03 Photojournalism****693.04 Magazines****693.05 Public Relations****694 Group Studies U G 1-5**

Regular class meetings and group discussions of specified problems.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 25 cr hrs.

**711 Electronic Publishing U G 3**

Survey of videotex, teletext, and cabletext; emphasis on news services provided by these publishing activities; impact on other media.

1 3-hr cl.

**712 Producing News for Videotext, Teletext, and Cabletext U G 3**

Presentation of the techniques of editing, writing, and reporting for electronic publishing.

1 cl, 2 2-hr labs. Prereq: 201 and 202, or 571, or permission of instructor; 711 recommended.

**H783 Honors Research U 3-5**

A program for students who are candidates for a degree *with distinction* in journalism.

Prereq: Sr standing, a grade of A in half of the major courses and a B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**801 Research Methodologies for Journalism and Mass Communication G 4**

Integrated reading and research in the fields of journalism.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs.

**801.01 Survey and other Field Methods**

Prereq: 651 or permission of instructor.

**801.02 Experimental Design**

Prereq: 651 or permission of instructor.

**801.03 Content Analysis**

Prereq: 651 or permission of instructor.

**801.04 Legal Methods**

Prereq: 607 or permission of instructor.

**801.05 Historical Methods**

Prereq: 605 or permission of instructor.

**802 Topics in Journalism and Mass Communication G 4**

Integrated reading and research in the fields of journalism.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs.

**802.01 People, Society, and Mass Media**

Prereq: 642 or permission of instructor.

**802.02 International Communications**

Prereq: 643 or permission of instructor.

**802.03 Theories of Mass Communication**

Prereq: 651 or permission of instructor.

**802.04 Literature and Journalism****802.05 Mass Communication Law G 4**

First Amendment principles through study of legal philosophy; judicial process; and case law affecting freedom of expression in the U.S.

1 3-hr cl. Prereq: 607 or permission of instructor.

**802.06 Special Topics G 4**

Discussion of current research in journalistic areas of mass communication.

1 3-hr cl. Repeatable to a maximum of 12 cr hrs.

**803 Issues in Journalism G 4**

Integrated reading and research in the fields of journalism.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs.

**803.01 News-Editorial Journalism****803.02 Radio/Television Journalism****803.03 Visual Communications****803.05 Public Relations**

Prereq: 431 or permission of instructor

**805 Seminar in Kiplinger Public Affairs Reporting**

Designed to enhance the understanding and public affairs reporting capabilities of persons admitted to the Kiplinger Program.

Au, Wi, Sp Qtrs. Prereq: Admission to the Kiplinger Public Affairs Reporting Program.

**805.01 Local, State, and Federal Levels G 3**

3 cl. Repeatable to a maximum of 9 cr hrs.

**805.02 Field Studies G 6 Arr****999 Research in Journalism G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Korean

204 Cunz Hall, 1841 Millikin Road, 292-5816

**101 First Year Korean I U 5**

Standard modern Korean: development of listening, speaking skills; basic grammar; reading and writing of the Korean script (*hangul*).

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. FL Admis Cond course. GEC/LAR course.

**102 First Year Korean II U 5**

Continuation of 101.

Wi Qtr. 5 cl. Prereq: 101 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. FL Admis Cond course. GEC/LAR course.

**103 First Year Korean III U 5**

Continuation of 102.

Sp Qtr. 5 cl. Prereq: 102 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

**104 Second Year Korean I U 5**

Continuation of 103.

Su, Au Qtrs. 5 cl. Prereq: 103 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

**111 Intensive Korean Quarter U 5 or 10**

An intensive course combining the content of 103 and 104.

Sp Qtr. 5 2-hr cl. Prereq: 102 or equiv. Not open to students with credit for 104. Equiv to 3rd and 4th courses in foreign language sequence; successful completion of 101, 102, 111 fulfills ASC foreign lang requirement. Students with credit for 103 may not register for more than 5 cr hrs. G E C / L A R course.

**205 Second Year Korean II U 5**

Continuation of 104; designed to provide further acquisition of language skills in speaking, aural comprehension, reading, and writing.

Au Qtr. 5 cl. Prereq: 104 or 111 or equiv.

**206 Second Year Korean III U 5**

Continuation of 205; designed to provide further acquisition of language skills in speaking, aural comprehension, reading, and writing.

Wi Qtr. 5 cl. Prereq: 205 or equiv.

**231 Elements of Korean Culture U 5**

A survey of the religion, customs, performing arts, fine arts, literature, and social institutions of the Korean people from the earliest era to the present.

Sp Qtr. 5 cl. Taught in English.

**507 Third Year Korean I U G 5**

Readings in modern Korean, aiming at expansion of vocabulary, acquisition of Chinese characters; translation, composition, and grammar drill.

Au Qtr. 5 cl. Prereq: 206 or equiv.

**508 Third Year Korean II U G 5**

Continuation of 507.

Wi Qtr. 5 cl. Prereq: 507 or equiv.

**509 Third Year Korean III U G 5**

Continuation of 508.

Sp Qtr. 5 cl. Prereq: 508 or equiv.

## Landscape Architecture

136B Brown Hall, 190 West 17th Avenue, 292-8263

**151 Landscape Architectural Design II U 5**

Theory and principles of design and problem solving process as applied to fundamentals of design form in the landscape.

Wi, Sp Qtrs. 3 cl, 4 lab hrs.

**200 Outlines of Landscape Architecture U 2**

Introduction to landscape architecture and the environment; roles of the landscape architect in contemporary society.

Au, Sp Qtrs. 2 cl. VPA Admis Cond course.

**201 Historical Overview of Human Design on the Land U 5**

Efforts of individuals and societies to control and shape the environment from earliest times to present.

Au Qtr. 5 cl. SS Admis Cond course. BER/GEC/LAR course.

**202 Shaping the American Landscape U 5**

Critical analysis of the shaping of the American landscape.

Wi Qtr. 5 cl. BER/GEC/LAR course. VPA Admis Cond course.

**204 Design of Gardens and Small Properties I U 5**

Design of small-scale residential projects; master planning, use of plants and architectural materials, graphics.

Wi Qtr. 2 cl, 4 lab hrs. VPA Admis Cond course.

**205 Design of Gardens and Small Properties II U 5**

Continuation of 204.

Sp Qtr. 2 cl, 4 lab hrs. Prereq: 204.

**221 Landscape Construction: Earthwork as Design U 5**

Study of techniques essential to the horizontal and vertical development of site designs; emphasis on grading as an artform.

Sp Qtr. 3 cl, 6 lab hrs. Prereq: 271 and Math 150.

**252 Landscape Architectural Design III U 5**

Introduction to general ecological systems and their relationship to landscape design.

Au Qtr. 3 cl, 6 lab hrs. Prereq: Geol&Min 121, 2.15 CPHR, and 45 cr hrs and successful completion of portfolio review or permission of dept.

**253 Landscape Architectural Design III U 5**

Development of landscape design skills in abstract and real forms; color and spatial organization.

Wi Qtr. 3 cl, 6 lab hrs. Prereq: 252.

**254 Landscape Architectural Design IV U 5**

Design based upon knowledge of human behavioral psychology.

Sp Qtr. 2 cl, 8 lab hrs. Prereq: 253.

**271 Landscape Architectural Graphics I U 3**

Basic graphic elements, media and skills used in preparing and delineating hardline drafted plans, sections and base sheets for landscape architecture design and construction.

Au Qtr. 6 lab hrs. Prereq: Larch major or permission of the department. VPA Admis Cond course.

**272 Landscape Architectural Graphics II U 3**

Basic graphic elements, media and skills used in preparing and delineating freehand plans, sections, elevations, and isometrics essential to landscape architecture presentations.

Wi Qtr. 6 lab hrs. Prereq: 271.



**322 Landscape Construction: Layout Controls U 3**

Study of techniques essential to horizontal and vertical development of site designs; emphasis on layout, and circulation.

Au Qtr. 2 cl, 2 lab hrs. Prereq: 221 and Math 117.

**323 Landscape Construction: Water in the Landscape U 5**

Integration of site systems; application of landscape construction and landscape materials detailing. Study of surface and subsurface drainage, stormwater management; pools, fountains, and water features in the landscape.

Wi Qtr. 3 cl, 6 lab hrs. Prereq: 322.

**333 Planting Design U 3**

Issues of planting design applied to the practice of landscape architecture.

Wi Qtr. 3 cl, 3 lab hrs. Prereq: Hort 234. Not open to students with credit for 233.

**355 Landscape Architectural Design V U 5**

Theory, principles, and vocabulary of site planning and design reflecting site analysis, social-cultural setting, programmatic requirement, conceptualization, and development-growth issues.

Wi Qtr. 2 cl, 9 lab hrs. Prereq: 221, 254, and 322.

**356 Special Topics Studio U 3**

A studio of several sections to explore contemporary issues of landscape architectural design, planning, and research.

Sp Qtr. 2 cl, 4 lab hrs. Prereq: 323 and 355. Repeatable to a maximum of 9 cr hrs.

**361 Support Computer Technologies U 5**

Support computer technologies critical in landscape architecture planning, design, analysis, and presentations.

Au Qtr. 3 cl, 4 lab hrs. Prereq: En Graph 294L or equiv. Not open to students with credit for 373.

**362 Terrain Analysis U 5**

Methods and techniques of terrain analysis using aerial photographs, exploring characteristics of landform units, and addressing development issues.

Sp Qtr. 2 cl, 12-hr lab. Prereq: Geol&Min 121 or permission of instructor. Not open to students with credit for 610. BER/GEC/LAR course.

**424 Landscape Construction: Materials U 3**

Properties and production of man-made landscape building materials; material performance in exterior application; construction detailing with emphasis on wood and masonry assemblies.

Au Qtr. 3 cl, 3 lab hrs. Prereq: 322.

**425 Landscape Architecture Construction: Structural Mechanics U 3**

Structural design of site elements typical in landscape architectural design.

Wi Qtr. 3 cl, 3 lab hrs. Prereq: Math 117.

**442 Landscape Architectural Design VIII U 6**

Project scale site planning and design; emphasis on development of landscape architectural skills required to complete the master plan and schematic design phases of landscape design.

Au Qtr. 1 cl, 12 lab hrs. Prereq: 343. Travel and subsistence cost for the field trip will be borne by the student.

**457 Landscape Architectural Design VII U 5**

Design of macro-scale landscape studies involving urbanization and multi-use management of landscape resources; use of geo-referenced data, computer-assisted analysis and display.

Au Qtr. 2 cl, 8 lab hrs. Prereq: 323 and 355.

**458 Landscape Architectural Design and Construction U 5**

Synthesis, refinement and expansion of professional knowledge and skills through design development and contract document phases of project design in landscape architecture.

Wi Qtr. 2 cl, 9 lab hrs. Prereq: 355 and 424.

**597 Stewardship Issues in Environmental Design and Development U 5**

Exploration of the ecological, economic, ethical, political, and social-cultural ramifications of contemporary environmental issues; emphasis on ways the individual or group can respond effectively.

Sp Qtr. 5 cl. Prereq: Sr standing. GEC/LAR course.

**603 History of the Profession of Landscape Architecture U G 5**

Critical analysis of the historical formulation, growth, and present status of the profession of landscape architecture, concentrating on personalities, concerns, and works by selected landscape architects.

Sp Qtr. 5 cl. Not open to students with credit for 203 or 742.

**620 Landscape Design Implementation II P G 5**

Study of design implementation procedures including: grading and drainage, earthwork calculations, road alignment, staking and layout, surveying appliances.

Au Qtr. 3 cl, 6 lab hrs. Prereq: Grad standing in larch or permission of grad studies committee.

**622 Landscape Design Implementation III P G 5**

Study of stormwater management in the treatment of landscape, uses of water in ponds, pools, and fountains; irrigation systems.

Wi Qtr. 3 cl, 6 lab hrs. Prereq: 620 or equiv with permission of grad studies committee.

**624 Landscape Architecture IV: Materials and Methods of Construction P G 4**

Introduction to landscape architecture construction materials and their use in building structures.

Au Qtr. 2 cl, 6 lab hrs. Prereq: Grad standing in larch or permission of grad studies committee. Not open to students with credit for 421.

**626 Landscape Construction: Layout Controls G 3**

Basic surveying, horizontal, and vertical curve alignment for roads, and staking and layout of design elements.

Au Qtr. 2 cl, 2 lab hrs. Prereq: 1st yr grad standing or permission of instructor. Not open to students with credit for 322.

**640 Landscape Architectural Design P G 5**

Exploration and application of principles of design, components and characteristics of space, landscape architectural design process, and small scale design.

Au Qtr. 2 cl, 12 lab hrs. Prereq: Grad standing in larch or permission of grad studies committee.

**642 Urban Landscape Design P G 5**

Landscape design in the urban setting; emphasis on design process, spatial structure, and design detailing of urban spaces.

Wi Qtr. 2 cl, 12 lab hrs. Prereq: 640 or permission of grad studies committee.

**644 Site Planning and Design P G 5**

Investigation of site planning and design at the project scale in the urban fringe or rural setting.

Sp Qtr. 2 cl, 12 lab hrs, arr field trips. Prereq: 642 or permission of grad studies committee. Travel and subsistence costs for the field trips will be borne by the student.

**663 Landscape Architecture Professional Practice Seminar U G 5**

Development of writing skills applied to professional issues in landscape architecture.

Sp Qtr. 2 2-hr cl, 1 1-hr cl. Prereq: Second writing course and sr standing. Not open to students with credit for 451. GEC course.

**670 Graphic Techniques in Landscape Architecture P G 3**

Graphic media, elements, and skills required in the preparation of landscape architectural presentations in plan, section, and elevation.

Au Qtr. Prereq: Grad standing in larch or permission of grad studies committee.

**672 Landscape Architectural Graphics III P G 3**

Principles and techniques of drawing and rendering of sections, isometrics, and perspectives.

Wi Qtr. 6 lab hrs. Prereq: 670 and grad standing in larch. Not open to students with credit for 272.

**693 Individual Studies U G 2-5**

For students in the Graduate School and those who wish to pursue special studies in landscape architecture.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing or permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

For students majoring in landscape architecture desiring to pursue special studies not offered in the fixed curriculum.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of the dept. Repeatable to a maximum of 15 cr hrs.

**740\* Research and Documentation in Landscape Architecture P G 5**

Research in professional practice techniques; emphasizes all phases of design investigation and documentation.

Au Qtr. 1 cl, 4 2-hr labs. Prereq: Grad standing in larch. Repeatable to a maximum of 15 cr hrs.

**750 Studio in Landscape Architecture P G 5**

Advanced professional landscape architectural project design techniques; documentation and execution of all phases from programming through detailed design and construction documents.

Au, Wi, Sp Qtrs. 4 4-hr lab. Concur: 740 and grad standing in larch. Repeatable to a maximum of 15 cr hrs.

**758 Landscape Architecture Design and Construction G 8**

Synthesis refinement and expansion of professional knowledge and skills through design development and contract document phases of project design in landscape architecture.

Wi Qtr. 2 cl, 9 labs. Prereq: 622, 624, 626, and three qtrs of 750.

**760 Evaluation and Criticism In Landscape Architecture P G 2**

Seminar in design philosophy and aesthetic evaluation criteria in landscape architecture.

Au, Wi, Sp Qtrs. 1 2-hr seminar. Prereq: Grad standing in larch. Repeatable to a maximum of 8 cr hrs.

**970 Project in Landscape Architecture G Arr**

Project scale design research, programming, and preparation of design alternatives, schematic, design development and construction documents for a selected project.

Au, Wi, Sp Qtrs. 2-15 hrs arr. Prereq: Grad standing in larch. Grade P will be assigned until completion of the project, at which time a letter grade will be given. Repeatable to a maximum of 15 cr hrs.

**998 Thesis in Landscape Architecture G 1-15**

Preparation of master's thesis.

Au, Wi, Sp Qtrs. Arr. Prereq: Permission of Graduate Studies Committee Chair. Grade P will be assigned until completion of the project, at which time a grade of S/U will be given. Repeatable to a maximum of 99 cr hrs.

## Latin

414 University Hall, 230 North Oval Mall, 292-2744

See also Classics.

Classics majors specializing in Latin should consult the departmental statement in the College of Humanities section of the *Colleges of the Arts and Sciences Bulletin*. Placement tests are required for all matriculating (including transfer) students who continue the study of Latin in the University in courses 101, 102, 103, 104, and any 200-level course. A placement test will be given on the first day of the quarter. For details see the departmental secretary in 414 University Hall.

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.

**101 Elementary Latin I U 5**

Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 100.01, 100.02, or 101.01; or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

**102 Elementary Latin II U 5**

Au, Wi, Sp Qtrs. 5 cl. Prereq: 100.02 or 101 or 101.01, or 5 cr hrs of 101.02 or 101.51. Not open to students with credit for 102.01 or 5 cr hrs of 102.51. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

**103 Intermediate Latin I U 5**

Completion of Latin grammar and syntax; introduction to reading of Latin authors.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 102, 102.01, or 5 cr hrs of 102.02 or 102.51. Not open to students with credit for 103.01 or 5 cr hrs of 103.51. This course is available for EM credit. GEC/LAR course.

**104 Intermediate Latin II U 5**

Selected readings in Latin literature.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Placement test, or 103.01, or 5 cr hrs of 103.02 or 103.51. This course is available for EM credit. BER/GEC/LAR course.

**206 Roman Comedy U 5**

Readings from the comedies of Plautus and Terence.

5 cl. Prereq: 104 or equiv high school Latin. Not open to students with credit for 202.

**210\* Cicero U 5**

Readings from the Orations.

Au Qtr. 5 cl. Prereq: 104 or equiv high school Latin. Not open to students with credit for 201.

**211 Vergil U 5**

Readings from the *Aeneid*.

Sp Qtr. 5 cl. Prereq: 104 or equiv high school Latin. Not open to students with credit for 205.

**212\* Roman Historians U 5**

Readings from Caesar, Sallust, Livy, and/or Tacitus' *Agricola*.

Wi Qtr. 5 cl. Prereq: 104 or equiv high school Latin. Not open to students with credit for 203.

**213\* Ovid U 5**

Readings from the *Metamorphoses*.

5 cl. Prereq: 104 or equiv high school Latin.

**293 Individual Studies U 1-3**

Intermediate readings in Latin literature.

Su, Au, Wi, Sp Qtrs. Prereq: 101-104 or equiv; and written permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**571 Fundamentals of Latin for Graduate Students I G 5**

Fundamentals of Latin grammar and syntax for grad students preparing to use Latin for work in non-classical fields.

5 cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 501. Credit does not apply toward minimum hrs required for master's or doctoral degree. No audit.

**572 Fundamentals of Latin for Graduate Students II G 5**

A continuation of 571; preparation for reading Latin texts.

5 cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 502. Credit does not apply toward minimum hrs required for the master's or doctoral degree. No audit.

**612\* Latin Prose Composition U G 5**

Review of elementary syntax leading to composition of sentences and short connected passages; concurrent readings from Caesar or Cicero.

Au Qtr. 3 cl, 2 hrs arr. Prereq: 4 courses more advanced than 104 or permission of instructor.

**614\* Readings in Horace U G 5**

Readings from the *Odes* and *Epodes*.

Wi Qtr. 5 cl. Prereq: 4 courses more advanced than 104. Not open to students with credit for 214.

**615\* Readings in Cicero U G 5**

5 cl. Prereq: 4 courses more advanced than 104.

**617 Readings in Caesar U G 5**

2 2-hr cl. Prereq: 4 courses more advanced than 104.

**618\* Readings in Lucretius U G 5**

Extensive readings from *De Rerum Natura*.

2 2-hr cl. Prereq: 4 courses more advanced than 104.

**619\* Readings in Ovid U G 5**

Au Qtr. 2 2-hr cl. Prereq: 4 courses more advanced than 104.

**620\* Readings in Livy U G 5**

5 cl. Prereq: 4 courses more advanced than 104.

**622\* Readings in Roman Comedy U G 5**

Extensive readings drawn from the works of Plautus and Terence.

5 cl. Prereq: 4 courses more advanced than 104.

**660 Special Topics in Latin Literature U G 5**

Extensive reading from masterpieces of Latin literature; topic varies.

Sp Qtr. 2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 20 cr hrs.

**693 Individual Studies U G 1-6**

Passages for reading and topics for investigation will be selected to meet the needs of individual students.

Su, Au, Wi, Sp Qtrs. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-6**

Su, Au, Wi, Sp Qtrs. Prereq: 4 courses more advanced than 104 or permission of chairperson. Repeatable to a maximum of 20 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**701\* Survey of Latin Literature: The Republic U G 5**

A survey of authors representative of the Republican period of Latin literature, with discussion of historical background and methods of criticism. 2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 601.

**702\* Survey of Latin Literature: Augustan Age U G 5**

A survey of authors representative of the Augustan period of Latin literature, with discussion of historical background and methods of criticism. 2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 602.

**703\* Survey of Latin Literature: Imperial Period U G 5**

A survey of authors representative of the Imperial period of Latin literature, with discussion of historical background and methods of criticism. 2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 603.

**H783 Honors Research U 3-5**

A program of study arranged for each student with individual conferences, reports, and an honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the Latin courses taken and with an average of B in the remainder; written permission of instructor under whose supervision the work is to be completed and ASC Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in Latin. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**General Prerequisites for Courses Numbered 800 and Above**

Prerequisites for admission to courses numbered 800 and above are graduate standing and permission of the chairperson.

**802\* Advanced Latin Prose Composition G 5**

Study of the development and style of Latin prose; prose composition exercises; prepared and unprepared readings; conventions of prosody. 2 cl, tutorial arr. Prereq: 612 or permission of instructor.

**812† Studies in Vergil G 5**

Critical study of one or more of the works of Vergil. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**830 Studies in Roman Drama G 5**

Critical study of one or more of the Roman dramatists: Plautus, Terence, Seneca. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**831 Studies in the Roman Historians G 5**

Selected topics in Roman historiography: Caesar, Sallust, Livy, Tacitus. Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**832† Studies in Latin Lyric and Elegy G 5**

Selected topics: poems of Catullus, the *Odes* and *Epodes* of Horace, or the elegies of Propertius, Tibullus, or Ovid. Sp Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**833† Studies in Roman Satire and Novel G 5**

Critical study of one or more of the Roman satirists and novelists: Lucilius, Horace, Persius, Petronius, Juvenal, Apuleius. Au Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**835 Studies in Roman Epic G 5**

Selected topics in the history of Roman epic exclusive of Vergil: Ennius, Lucretius, Ovid, Lucan. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**894 Group Studies G 1-6**

Repeatable to a maximum of 20 cr hrs.

**993 Individual Studies G 1-4**

Assigned reading and individual research.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**995 Seminar I G 5**

The seminar completes a two-qtr sequence (Au/Wi, Wi/Sp) begun with an 800-level intensive study of an author or genre; e.g. Cicero, Horace, Apuleius, or comedy.

Sp Qtr. Repeatable to a maximum of 20 cr hrs.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**Law**

104 Law Building, 1659 North High Street, 292-2631

The College of Law is on a semester calendar. For 1993-94, the Fall Semester will begin August 19, 1991 and end December 20, 1991. The Spring Semester will begin January 6, 1992, and end May 8, 1992. The credits contained on the listing below are semester credit hours. The equivalent number of quarter credit hours can be determined by multiplying the semester hours by one and one-half.

**502 Appellate Advocacy I P 2**

Procedural and substantive aspects of appellate practice; the student prepares a brief and presents an oral argument on the basis of assigned research materials.

Au Sem; 1 cl hr, 1 research and writing hr per week. Offered 3rd Sem and is required for degree; graded S or U upon completion.

**503 Contracts P G 3**

Remedies for breach; offer and acceptance; consideration; third party beneficiaries; assignment of rights and delegation of duties; conditions; impossibility and frustration; statute of frauds.

1st, 2nd Sem; 2-sem sequence. Progress graded 1st Sem; credit given on completion of 6 cr hrs.

**504 Torts P G 5**

T respass to person; negligence; misrepresentation; nuisance, strict liability; liability insurance; alternatives to the fault system; and federal and state regulation of traffic safety.

1st Sem.

**505 Property P G 3**

Acquisition, incidents, and transfer of ownership; possessory, concurrent, marital, and future interests, and contractual modification of these results.

1st, 2nd Sem; 2-sem sequence. Progress graded 1st Sem; credit given on completion of 6 cr hrs.

**507 Civil Procedure P G 3**

Civil procedure in state and federal courts; development of equity; abolition of common law forms of action; merger of law and equity; jurisdiction; venue.

1st, 2nd Sem; 2-sem sequence. Progress graded 1st Sem; credit given on completion of 6 cr hrs.

**510 Constitutional Law P G 5**

Functional study of the major substantive, methodological, and federalistic limitations upon governmental power obtaining under practice of judicial review.

2nd Sem.

**511 Research, Analysis, and Writing I P 2**

Use of law books and computer legal retrieval systems; research methodology and citation form; introduction to legal analysis and writing.

1st, 2nd Sem. 1 cl hrs per week. 2-sem sequence. Progress graded 1st sem; credit given on completion of 2 cr hrs.

**600 Appellate Advocacy II P 1-2**

Preparation of a brief and presentation of several oral arguments.

Au, Wi/Sp, Su. 1 or 2 cr hrs by arrangement with instructor. Prereq: 502, 511. Repeatable to a maximum of 2 cr hrs with permission of the instructor. S or U grade given on completion of second-year Moot Court Program or other approved moot court program.

**601 Legal Writing P 3**

Training in the preparation of legal documents.

1st, 2nd sem. 1 2-hr cl, 1-hr tutorial. Prereq: Completion of first-year law.

**602 Advanced Legal Research**

Advanced topics of legal research.

2 cl. Prereq: 511

**603 Evidence P 3-4**

Survey of rules of evidence; particularly demonstrative, testimonial, and circumstantial proof; qualification and examination of witnesses; privilege; relevancy; documents; hearsay rule and its exceptions.

**605 Commercial Paper P G 2-3**

Types of commercial or negotiable paper; liability of parties; transfer and payment.

**606 Federal Income Taxation P G 3-5**

Gross income; deductions; credits; attribution; timing; sales and other dispositions of property; characterization of income and deductions.

**607 Business Associations P G 3-6**

Formation, financing, governance, and regulation of corporations and partnerships, and including problems under the federal securities laws.

**607.01 Business Associations**

4 or 5 cl. Not open to students with credit for 607.02.

**607.02 Business Associations—Extended**

3 cl. 2 sem sequence. Progress graded 1st sem, or given on completion of 2nd sem. Not open to students with credit for 607.01.

**608 Advanced Business Association P G 2**

Advanced study of problems of large publicly-held corporations; federal corporate law; corporate consolidations and distributions.

Prereq: 607.

**609 Sales P G 1-3**

A study of the Uniform Commercial Code and other statutes bearing on the sale of goods in the American market.

**610 Secured Transactions P G 2-3**

Creation and perfection of security interests in goods and intangibles under the Uniform Commercial Code; priorities and remedies.

Not open to students with credit for 612.

**611 Debtor and Creditor Law P G 2-3**

Debtor and creditor rights and remedies; emphasis on the Bankruptcy Code.

Not open to students with credit for 612.

**612 Secured Transactions and Debtor and Creditor Law P G 4**

Integrated treatment of secured transactions and debtor-creditor law.

Not open to students with credit for 610 or 611.

**613 Employment Law P G 2-4**

State and federal regulation of the employment relationship with primary focus upon minimum wage and overtime compensation, workers' disability and unemployment compensation, safety and health, retirement and pension security, and wrongful discharge.

**614 Labor Law P G 3-5**

Federal regulation of labor-management relations focusing upon employee organizational and representational rights, selection of bargaining representative, collective bargaining process, contract administration and enforcement, and internal union affairs.

3 to 5 cl. Prereq: 613. Not open to students with credit for 615 or 616.

**615 Labor Law I P 2-3**

Federal regulation of labor-management relations focusing on employee organizational and representational rights, selection of bargaining representative, and collective bargaining process.

2 to 3 cl. Prereq: Completion of first yr law. Not open to students with credit for 614.

**616 Labor Law II P 2-3**

Federal regulation of labor-management relations focusing upon collective bargaining process, contract administration and enforcement, and internal union affairs.

2 or 3 cl. Prereq: 615 and completion of first yr law. Not open to students with credit for 614.

**618 Insurance P G 2**

Insurance law and practice with particular reference to fire, life, and automobile insurance; insurable interest; warranties and representation; waiver and estoppel; construction standard policies.

**619 International Law P G 2-4**

International agreements; status of states and individuals; recognition; jurisdiction; international claims; expropriation; human rights; sovereign immunity; war and peace; law of the sea; presidential congressional power.

**620 Jurisprudence P 2-3**

Jurisprudential thought as represented by general theories of or about law; assessment of leading legal doctrines; relationship to social control policy and to legal precepts.

**621 Real Estate Finance P G 2-3**

Introductory study of real estate financing, emphasizing mortgages, deeds of trust, installment land contracts, rights and remedies of borrowers and lenders, and contemporary financing innovations.

**622 State and Local Taxation P G 2**

Legal problems arising in property, excise, income, and estate-inheritance taxation; tax administration and procedure.

**623 Federal Antitrust Law P G 3-4**

Combinations in restraint of trade; monopolization, attempts and conspiracies to monopolize; mergers, patent antitrust problems, and price discrimination under Sherman, Clayton, and Federal Trade Commission acts.

**624 Real Estate Transfers P 3**

Examination of legal doctrine and institutions that govern the commercial and residential real estate industry.

1st, 2nd Sem. 3 3-hr cl. Prereq: Completion of first-year law.

**625 Copyright Law P G 2-3**

Protection of literary and artistic property under the federal copyright statute, related legislation and unfair competition law.

**627 American Legal History P G 2-3**

The history of American law from its colonial antecedents until the twentieth century, emphasizing the relationship between law and the changing social, political, and economic conditions.

**628 Legal Problems of Financial Information P G 2-3**

Problems of financial information in the context of business enterprise law and tax law.

**629 Legislation P G 2-3**

Roles of the lawyer in the legislative process; legislative organization, jurisdiction, and procedure; formation of legislative policy; legislative drafting; statutory interpretation.

**633 Criminal Law P 3-4**

Substantive criminal law; functions and goals; legislative and judicial roles; constitutional limitations; fundamental concepts of culpability; defenses; definitions and functions of selected offenses.

**634 Juvenile Justice P G 3**

The law applicable to children, including a study of agency and juvenile court treatment of dependent, neglected, abused, unruly, and delinquent children.

**635 Family Law P G 3-4**

Legal concerns in marital relationships, including entrance into marriage, spousal relationships during marriage, annulment, divorce, custody, and post-divorce financial arrangements; legal concerns in quasi-marital living arrangements; communal living and homosexual relationships.

**636 Law and the Mentally Disabled P G 2-3**

Problem-oriented analysis of interaction between law and social science; emphasis on civil commitment, rights of institutionalized individuals, rights to community services (educational, residential, employment), and guardianship.

**637 Comparative Legal History P G 2-3**

Comparative studies in history of law and exploration of relationship between the development of legal systems and societal structures.

**639 Federal Criminal Law P G 2-3**

Advanced substantive and procedural study of the federal criminal law enforcement system including RICO (Racketeer Influenced and Corrupt Organizations), mail fraud, drug offenses, tax enforcement, bank secrecy, and civil rights.

3 cl. Prereq: 633.

**640 Criminal Procedure: Police Evidence Gathering Practices P 3**

Legality of police practices to gather evidence; emphasis on interrogation and search and seizure; some reference to identification procedures and entrapment.

**641 Criminal Procedure: The Pretrial Process P 3**

Study of the criminal justice system emphasizing the right to counsel, bail, preliminary proceedings, grand jury, speedy trial, discovery, and pleas.

**644 Agency and Employment P 2-3**

A system-descriptive approach to the common incidents of employment, partnership, and other agencies.

**646 Protection of Personality Interest P G 2-3**

Legal rights and remedies developed to protect interests in reputation, privacy, and other aspects of human dignity.

**647 Sex-Based Discrimination and the Law P G 2-3**

Law, legal institutions, and policy issues relevant to the redress of sex-based discrimination; constitutional, legislative, executive, and judicial avenues of redress.

**648 Land Use Planning Law P G 2-3**

Zoning, subdivision controls, and an introduction to municipal planning; topics vary, may include eminent domain, state and regional planning, government development, and private land use controls.

**649 Advanced Land Use Planning Law P G 2-3**

Study of public regulatory devices for land use and development; eminent domain; planned unit development; urban renewal; official maps; new towns; open space.

Prereq: 648.

**650 Local Government Law P G 2**

Types and organizations of local government units; intergovernmental relations; "home rule" power of Ohio municipalities; personnel; lawmaking; community planning; taxing and finance; contracts; legal liability.

**652 Banking Law P G 2-3**

Study of development of banking activities, structure, and regulation; emphasis on state and federal banking laws; interinstitutional competition, and laws relating to geographic and product expansion.

**656 Gratuitous Transfers P 2-3**

Gifts, wills, intestate succession, protection of spouse and other dependents, fiduciary administration, social security and other employee benefits, life insurance.

**657 Consumer Law P G 2-3**

In-depth study of consumer rights and remedies as provided by the common law and federal and state statutes, with particular emphasis on the Federal Truth In Lending Act.

**658 Advanced Constitutional Law P G 2-3**

Constitutional theory, with emphasis on competing views of judicial review and the judicial function; the methodologies and processes of constitutional decision making; and criteria for judicial justification.

**659 Commercial Law P 3**

Combination of sales, commercial paper, and secured transactions courses; focuses on the entire Commercial Code and explores related federal statutes. 3 cl. Prereq: Completion of first yr law program. Not open to students with credit for 605, 609, or 610. Repeatable to a maximum of 6 cr hrs. Two sem sequence. Progress graded first sem; final grade awarded upon completion of 6 cr hrs.

**694 Group Studies P 1-4**

Group study in selected areas of the law.  
Repeatable to a maximum of 13 cr hrs.

**697 Study at a Foreign Institution P 1-10**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

1st, 2nd Sem, Su Session. Arr. Prereq: Written permission of the Dean. Repeatable to a maximum of 30 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation; limited to students in education, law, medicine, nursing, social work, bio-medical sciences, and allied health professions. Repeatable to a maximum of 4 cr hrs.

**700.01 Care of Patient/Client P G 1-2**

Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.

**700.03 Ethical Issues P G 1-2**

Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, mind control, malpractice, and social responsibility of the professions.

**700.04 Interprofessional Practicum in Clinical Settings P G 1-3**

Interprofessional teamwork in clinical settings.  
2nd Sem.

**703 Legal Negotiation and Settlement P 2-4**

Study of the theory, law, and practice of transactional and settlement negotiations through actual negotiations by individual students in a variety of legal negotiation settings.

2 2-hr cl. Prereq: 736.01 or professional responsibility recommended. Enrollment limited to 16 students, class attendance mandatory.

**704 Trial Practice P 2-4**

Forensic skills developed through actual trial advocacy by individual students in civil or criminal cases.

Prereq: 603 or written permission of instructor.

**705 Complex Litigation P 3**

Advanced substantive and procedural issues arising in multi-party, multi-jurisdiction complex litigation.

Lecture, student analysis, problem solving. Prereq: 507.

**706 Conflict of Laws P G 2-3**

Private law pertaining to jural relations containing one or more foreign elements; jurisdiction; foreign judgments; domicile; choice of law; torts; workmen's compensation acts; contracts; property; family law; decedents' estates.

**707 Administration of Decedents' Estates P 2**

Probate and contests of wills; jurisdiction; effect and necessity of administration; inventory and assets; contracts; sales and investments by personal representatives; claims; accounting and distribution.

**708 Regulation of Security Distributions P G 2-3**

Analysis of Securities Act of 1933 and its pervasive effects on the issuance and transfers of securities.

**709 Advanced Securities P G 2-4**

Advanced topics in federal and state securities law.

Prereq: 607, and prereq or concur: 708.

**710 Federal Courts P 3-4**

The federal judicial system; jurisdiction of the district courts, courts of appeals, and United States Supreme Court.

**711 Law and Medicine P G 2-3**

Selected issues in the practice of medicine; medical malpractice, ethical issues, regulation of the health care industry, and use of medical testimony and proof in litigation.

**713 Appellate Practice IV P 1-4**

Procedural and substantive aspects of appellate practice; perfection of appeals; preparation of briefs and oral argument; participation by third-year students in various aspects of Moot Court Program.

1 to 4 cr hrs by arrangement with instructor. Repeatable to a maximum of 6 cr hrs with permission of the instructor. S or U grade given on completion of third-year Moot Court Program.

**715 Corporate Taxation P G 3-4**

Taxation of organizations; operations; sales and liquidations; divisions and reorganizations.

Prereq: 606.

**716 International Aspects of U.S. Income Taxation P 2-3**

United States taxation of transnational transactions, including taxation of foreign entities operating in the United States and taxation of United States entities operating in foreign countries.

Prereq: 606.

**718 Unfair Trade Practice P G 2-3**

Comptitor, consumer, and administrative remedies for unfair business practices, including trademark infringement, trade secret appropriation, false advertising and disparagement, and copyright infringement.

**719 Natural Resources P 3**

The nature and incidents of public and private interests in water, minerals, oil and gas; conveyancing of natural resources, and mineral, oil, and gas leasing.

**720 Roman Law P 3**

Studies in the origins and development of Roman law based on original sources of translation.

Cross-listed in Classics as 607. This course is graded S/U.

**725 Deferred Compensation P 2-3**

Federal tax consequences of nonqualified deferred compensation plans and qualified pension, profit sharing, and stock bonus plans.

**727 Regulated Industries P G 3**

Legal and economic principles of rate regulation and entry requirements in utility, broadcasting, and transportation industries.

**728 International Transactions P G 2-4**

Legal problems in transnational context arising from doing business abroad; investments; establishment; exchange controls; trade, licensing; extraterritoriality of regulatory legislation; international agreements; European Common Market.

**729 Administrative Law P G 3-4**

A study of the creation, operation, and control of federal administrative agencies, emphasizing their legislative, investigative, and adjudicatory authority and its control through judicial review.

**731 Business Planning P G 2-4**

Advanced topics concerning business enterprises.

Prereq: 606 and 607.

**732 Environmental Law P G 2-4**

Federal environmental legislation, regulations, and judicial interpretation, including Natural Environmental Policy Act, the Clean Air Act, the Clean Water Act, and the Solid Waste Act, as amended.

**733 Political and Civil Rights: The First Amendment P G 2-3**

Advanced study of First Amendment precedent and doctrines governing the press, speech, association, and church-state relations.

**734 Political and Civil Rights: Equal Protection of the Law P G 2**

Advanced study of civil rights and legal problems of race relations in the contemporary social milieu; segregation; discrimination; equal protection; separatism; and affirmative action.

**735 Law Journal P 1-2**

Special studies covering diverse subjects of a legal nature participated in by the group selected for work on the *Law Journal*.

Prereq: Selection for *Law Journal* by editors. Repeatable to a maximum of 4 cr hrs. Students may earn up to 2 cr hrs for *Law Journal* participation prior to the beginning of the fifth semester, and may earn an additional 2 cr hrs for participation in the two final semesters of academic residence.

**736 Professional Responsibility**

Legal and ethical problems of the legal profession and the practicing lawyer. Required course.

**736.01 Legal Profession P 1-2**

Unauthorized practice, bar admission, group legal services, malpractice, professional organization, and discipline.

1st and 2nd Sem, Su Session. 1-2 cl. Prereq: First year law course.

**736.02 Legal Profession P 1-4**

A more comprehensive presentation of unauthorized practice, bar admission, group legal services, malpractice, professional organization, and discipline.

1st and 2nd Sem, Su Session. 4 cl. Prereq: First year law course. Not open to students with cr for 736.01.

**737\* Patent Law P G 2**

Fundamentals of substantive patent law relating to standards of patentability, patent claim interpretation and enforcement in patent litigation, and licensing.

**738 Study and Practicums in Legal Problems**

Pursuant to the New York Court of Appeals Rules for Admission to Practice, students who enroll for more than 8 cr hrs may be ineligible for admission to practice in New York. No student may enroll in more than 16 cr hrs.

Advanced study and training in performance of legal services for the poor under supervision of clinical faculty and staff attorney.

**738.01 Criminal Defense Practicum P 4**

Development of the basic knowledge and skills of criminal law practice. Prereq or concur: 603 plus one or more of the following: 633, 640, 641; or written permission of instructor.

**738.02 Civil Law Practicum P 4**

Development of the basic knowledge and skills of civil law practice on behalf of the poor.

May not be taken simultaneously with any other practicum.

**738.04† Juvenile Law Practicum P 4**

Study of the intricacies of the juvenile intake process, difficulties of dealing with a total family situation involving child neglect or juvenile delinquency, and substantive legal problems of the juvenile area.

Prereq: None; 634, 640 and/or 641 recommended.

**738.07 Civil Liberties Practicum P 4**

Supervised clinical course involving study of problems peculiar to civil liberties law practice, including handling of selected cases involving civil liberties.

Prereq: None; 733 and 734 recommended.

**738.20 Selected Legal Problems Practicum P 1-6**

Topics will change as specially scheduled in any semester.

Repeatable to a maximum of 8 cr hrs.

**739 Pretrial Litigation P 3**

Depositions and client interviews; drafting of interrogatories; case strategies.

1st, 2nd sem. 3 3-hr cl. Prereq: Completion of first-year law.

**740 Taxation of Gifts, Trusts, and Estates P 2-3**

Tax treatment of gratuitous transfers, including gift, estate, and generation-skipping taxation, and income taxation of trusts, estates, and beneficiaries.

**742 Trusts and Future Interests P G 3-4**

Classification of interests, construction of limitations, destructibility rule, Doctrine of Worthier Title, Rule in Shelley's Case, Rule against Perpetuities, trusts, powers, and duties of trustees.

Prereq: 656.

**743 Remedies P G 2-4**

An integrated study of remedial theory and devices available in the context of torts, contracts, and property law.

**744 Employment Discrimination Law P G 2-3**

A constitutional and statutory study of federal and state laws that proscribe employment discrimination based upon race, color, religion, sex, national origin, age, and physical and mental handicap.

**745 Federal Taxation of Partnerships and Partners P G 2-4**

Federal income taxation of partners in general and limited partnerships.

2-4 cl. Prereq: 606.

**746 Injunctions P 2**

Requirements for equitable jurisdiction, the collateral bar rule, interlocutory relief, procedures for granting, modifying, and appealing injunctions, and contempt.

**747 Statutory Civil Rights P 2-3**

Study of major federal civil rights statutes covering topics such as discrimination in housing, public accommodations, voting, discrimination in private contracts, by government units and officials, and by programs that receive federal financial aid.

2 or 3 cl. Prereq: Completion of first yr law program.

**750 Foreign Relations Law P 3**

Constitutional, statutory, and international law basis for conduct of foreign affairs by the U.S.

1st, 2nd Sem. 3 1-hr cl. Prereq: Completion of first-year law.

**751 Religion and the Constitution P 3**

Treatment of religion by federal and state constitutions.

1st, 2nd Sem. 3 1-hr cl. Prereq: Completion of first-year law.

**752 Law of Politics P 3**

Examines the laws that govern political elections, including campaign finance rules, ballot access issues, and re-apportionment.

3 cl. Prereq: 510.

**780 Law and Economics P 2-3**

Economic analysis of legal opinions, including a review of how courts use economic analysis.

3 cl. Prereq: Completion of first year law curriculum.

**781 Comparative Law P 2-3**

Broad study of legal systems with emphasis on patterns of similarities and differences.

3 cl. Prereq: Completion of first year law curriculum.

**782 Products Liability P 3**

Examines the theories and defenses of those involved in the manufacturing and selling of products.

3 cl. Prereq: Completion of first-year law curriculum.

**793 Individual Studies P G 1-4**

By special arrangement with the dean's office, special problems or projects may be taken for credit under the supervision of members of the faculty. The credit granted varies in proportion to the magnitude of the project. In general, assignment of special problems will be limited to instances of exceptional student specialization, scheduling difficulties, and curricular irregularity.

Repeatable to a maximum of 13 cr hrs. S or U grade on completion of assigned work.

**794 Group Studies P G 1-4**

Group study in selected areas of the law.

Repeatable to a maximum of 13 cr hrs.

**796 Seminars P G 2-3**

Small group study and training in legal and non-legal research, expository writing, and various functions of the practicing lawyer.

**796.03 Constitutional Problems**

Advanced constitutional questions, including evolution of judicial review, intergovernmental relationships, protection of civil liberties, special problems under Ohio Constitution.

**796.07 Legal Regulation of Devolution of Property**

Socio-legal problems raised by devolution of wealth through such arrangements as public welfare programs, union welfare funds, insurance, foundations, charitable trusts, and pension trusts.

**796.08† Problems in the Law of Evidence**

Advanced evidentiary questions involved in preparation for and trial of cases.

**796.13 Medical-Legal Problems**

Conflict in concept between disciplines of law and medicine in matters of causation, injury, disability, prognosis, aggravation, and re-injury related to their use in proof of such elements in litigation.

**796.16 Right of Privacy**

Individual's interests in freedom from publicity and in physical seclusion; particularly legal response to social and technological changes which threaten these interests.

**796.19† Selected Problems in Criminal Law and Procedure P 2**

Topics vary and will be announced each semester.

**796.20 Research Seminar in Law**

Topics will change as specially scheduled in any quarter.

Repeatable to a maximum of 6 cr hrs.

**796.39 Business Planning**

Planning and drafting in field of business association; principally concerned with problems in general and limited partnerships, business trusts, and closely-held corporations.

**796.44 Legislative Planning**

Role of lawyer in advocating or opposing state and federal legislation; problems selected from past and current proposals before legislature.

Prereq: 629. Repeatable to a maximum of 6 cr hrs.

**796.47 Securities Regulation**

Study of recent legal developments affecting security trading market, brokers, exchanges and NASD, investment companies, and other institutional investors.

Prereq: 709. Must enroll to a maximum of 4 or hrs.

**796.48 Trade Regulation**

Study of current problems of trade regulations, e.g. antitrust, unfair trade practices, patents, food and drug law.

Prereq: By designation of instructor.

**796.51† Social and Environmental Litigation**

Study of impact of law on social and environmental problems with emphasis on procedure and choice of remedies.

Prereq: None; 710 and 719 recommended.

**796.52 Federal Criminal Law**

The relationship of federal and state criminal law; historical role and specialized problems of federal criminal law.

**796.55† Consumer Credit**

Consumer credit; statutory and judicial regulation, with particular emphasis on the problems of the poor consumer.

Prereq: 605, 609, or 610.

**796.58 Law and the Political Process**

Exploration of the lawyer's role in the political process; the relationship of political parties to the election process; and the interplay of legal requirements and the campaign and voting procedures.

**796.61 Society, Deviance, and the Law**

How certain members of society are labeled as deviant and how society reacts to that label with legal sanctions and social management techniques.

Prereq: Permission of instructor.

**796.62 Commercial Law**

In-depth consideration of commercial law, focusing primarily on the Uniform Commercial Code.

Prereq: 605, 609, and 610.

**796.63 Problems in Torts**

Exploration of current and emerging problems in the law of torts.

**797 Interdepartmental Seminars P 1-5**

## Linguistics

222 Oxley Hall, 1712 Neil Avenue, 292-4052

See also English, the foreign languages, Romance Linguistics, and Sanskrit.

**201 Introduction to Language in the Humanities U 5**

Examination of language as a system of human communication; provides students with the tools needed for the recording, investigation, and close analysis of language.

Su, Au, Wi, Sp Qtrs. 5 cl. H201 (honors) may be available (Wi Qtr 1995) to students enrolled in an honors program or by permission of dept. Not open to students with credit for 202. BER/GEC/LAR course.

**202 Introduction to Language in the Social Sciences U 5**

Examination of language as a system of human communication; provides students with a general understanding of human linguistic behavior and cognition.

Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 201. BER/GEC/LAR course.

**203† Language Differences and Language Universals U 5**

Differences in sound systems, word structure, and grammar; illustrations from foreign accents; language types; universal principles of structure.

Wi Qtr. 5 cl. Prereq: 201 and English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. BER/LAC course.

**230† Language and Gender U 5**

How culturally enshrined ideas about gender affect language and the use of language and how linguistic conventions for the expression of gender differences reinforce these ideas.

Wi Qtr. 5 cl. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. GEC course.

**261 Language and Social Identity in the U.S. U 5**

Relationships between language and social diversity in the general American speech community; discussion of how individuals and social groups distinguish themselves on the basis of language.

Sp Qtr. 5 cl. Prereq: English 110 or 111 or equiv. BER/GEC/LAR course.

**265 Language across Cultures U 5**

Investigation of relationships between language and culture in different societies with a view to shedding light on cross-cultural similarities and differences.

Au Qtr. 5 cl. Prereq: English 110 or 111 or equiv. BER/GEC/LAR course.

**271 Language and the Mind U 5**

Introduction to the psychological processes by which humans produce and understand sentences, the means by which these processes arise in the child, and their bases in the mind and the brain.

Wi Qtr. 5 cl. Prereq: 201 and English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. BER/GEC/LAR course.

**285† Language Change and Development U 5**

Survey of the kinds of linguistic change; discussion of the external influences (social, cultural, political, etc.) that affect the historical development of languages.

Au Qtr. 5 cl. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. BER/LAC/LAR course.

**294 Group Studies U 5**

Introductory topics in linguistics.

Repeatable to a maximum of 10 or hrs.

**600 Phonetics U G 5****600.01 Introduction to Phonetics**

Principles of articulatory phonetics, with some discussion of acoustic phonetics; practice in the production, recognition, and transcription of sounds in various languages of the world.

Au Qtr. 5 cl. Prereq or concur: 601 or an equiv course in linguistics or phonetics. Not open to students with credit for 600.

**600.02 Laboratory Phonology**

Introduction to laboratory methods and quantitative models of speech for linguistics.

Su Qtr. 2 2-hr cl. Prereq: 600.01.

**601 Introduction to Linguistics U G 5**

A broad introduction to general linguistics: survey of phonological, morphological, syntactic, and semantic analysis, and of historical and comparative linguistics.

Au, Wi, Sp Qtrs. 5 cl.

**602 Introduction to Syntax U G 5**

Theories of syntax; principles of syntactic description.

**602.01 Introduction to Syntax I**

Au Qtr. 5 cl. Prereq: 601.

**602.02 Introduction to Syntax II**

Wi Qtr. 5 cl. Prereq: 602.01.

**603 Introduction to Phonology U G 5**

Introduction to phonological analysis and the principles governing the structure, acquisition, and change of phonological systems; survey of major phonological theories.

**603.01 Introduction to Phonology I**

Wi Qtr. 5 cl. Prereq: 601.

**603.02 Introduction to Phonology II**

Sp Qtr. 5 cl. Prereq: 603.01.

**603.03† Introduction to Phonology III**

Au Qtr. 5 cl. Prereq: 603.02.

**609 Morphology U G 5**

The grammatical and phonological analysis of words, and their significance in linguistic structure.

Sp Qtr. 5 cl. Prereq: 601 or permission of instructor.

**611 Introduction to Historical Linguistics U G 5**

Introduction to the methods and principles of historical linguistics.

Wi Qtr. Prereq: 601 and 603.01, or background in phonology with permission of instructor.

**612 Introduction to Cognitive Science U G 3**

Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.

Wi Qtr. 2 1 1/2-hr cl. Prereq: Permission of instructor or a total of 12 or hrs from at least two of the following areas: cptr/inf, linguist, philos, and psych. Not open to students with credit for Cptr/Inf 612, Philos 612, or Psych 612 or 794 (Sp Qtr 1989) or 794A (Wi Qtr 1990). Cross-listed in Computer and Information Science, Philosophy, and Psychology.

**615 Psycholinguistics U G 5**

An introduction to high-level language processing, including word recognition, sentence understanding, and discourse processing.

Wi Qtr. 3 1 1/2-hr cl. Prereq: 601 or permission of instructor. Not open to students with credit for Psych 615 or Ling 671. Cross-listed in Psychology.

**623† Topics in Indic Linguistics U G 3, 5**

Possible topics include advanced classical Sanskrit, introductory Vedic Sanskrit, Indo-Iranian or Indo-Aryan linguistics, or studies in the ancient Indian grammarians.

Au Qtr. 3, 5 cl. Prereq: 622 or Sanskrit 622 or permission of instructor. Repeatable to a maximum of 15 or hrs.



**650 Field Methods in Linguistics U G 5****650.01 Field Methods I**

Methodology for determining the phonological system of a previously unknown language through the use of a native informant.

Au Qtr. 5 cl. Prereq: 600 or permission of instructor. Repeatable to a maximum of 40 cr hrs.

**650.02 Field Methods II**

Methodology for determining the morphological and syntactic system of a previously unknown language through the use of a native informant.

Wi Qtr. 5 cl. Prereq: 650.01. Repeatable to a maximum of 40 cr hrs.

**661 Sociolinguistics U G 5**

Description and explanation of the interaction between linguistic and social factors in language.

Prereq: 601 or permission of instructor.

**661.01 Introduction to Sociolinguistics**

Survey of approaches to the study of language in its social context: sociology of language, ethnography of speaking, discourse analysis, quantitative sociolinguistics.

Sp Qtr. 2 2-hr cl.

**661.02 Introduction to Quantitative Sociolinguistics**

Exploration of language in its social context through the methods of quantitative analysis of linguistic variation, including the Labovian and implicational models.

Au Qtr. 2 2-hr cl. Prereq: 661.01.

**672 Language Description U G 3-5**

Informant techniques and (if available) textbooks and published linguistic analyses are employed in analyzing and describing a language.

Au, Sp Qtrs. 3-5 cl. Prereq: 601. Repeatable to a maximum of 30 cr hrs.

**681 Algebraic Linguistics U G 5**

Formal properties of grammar and automata; relations between linear, context-free and context-sensitive grammars and finite, pushdown-storage and linear-bounded automata; properties of transformational grammars.

Wi Qtr. 5 cl. Prereq: 601 and permission of instructor.

**683 Linguistic Semantics U G 5****683.01 Introduction**

Problems and methods of analysis in linguistic semantics and pragmatics; use of formal logic and semantic model theory in analyzing natural languages.

Wi Qtr. 5 cl. Prereq: 681 or equiv. Not open to students with credit for 683 prior to Sp Qtr 1981.

**683.02 Montague Grammar**

Syntactic and model-theoretic analysis of natural languages as described by Richard Montague in *The Proper Treatment of Quantification in Ordinary English*.

Sp Qtr. 4 cl. Prereq: 681 or 683.01 or a course in symbolic logic.

**685† Languages in Contact U G 3, 5**

Study of the effects of language contact on the structure of the involved languages; of the characteristics of the individuals and communities involved in language contact.

Au Qtr. 3, 5 cl. Prereq: 601.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq or concur: 601 or permission of instructor. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Study of topics not regularly scheduled for seminars in linguistics, under the direction of a faculty member.

Prereq: 601. Repeatable to a maximum of 30 cr hrs.

**695† Seminar in Anthropological Linguistics U G 5**

Sp Qtr. Prereq: Anthrop 675 or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**737 Proseminar in Cognitive Science U G 2**

An in-depth examination of the interdisciplinary field of cognitive science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Sp Qtr. 1 2-hr cl. Prereq: cptr/inf 612, Linguist 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial Systems Engineering, Philosophy, Psychology, and Speech and Hearing Science.

**780† Formal Pragmatics U G 5**

Introduction to contemporary theories of pragmatic phenomena which build on theories of dynamic interpretation in formal semantics.

Au Qtr. 2 2-hr cl. Prereq: 683.02.

**H783 Honors Research U 3-5**

Informal conferences to allow full scope to the initiative of the student, who will prepare an honors thesis in consultation with the instructor.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing and the completion of departmental honors requirements with a grade of A in at least half of the linguist courses, including approved related courses; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in linguist. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**795 Seminar in Linguistics U G 1-5**

A selected group study, with emphasis on individual writing and presentation.

Au, Wi, Sp Qtrs. 3-5 cl. Prereq: 602 and 603, or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**800 Proseminar in Linguistics G 3**

Introduction to the problems, methods, and tools of linguistic research.

Sp Qtr. 2 cl. Recommended for all candidates for grad degrees. This course is graded S/U.

**801\* Historical Linguistics I G 5**

An introduction to the methods, conventions, and literature of comparative-historical linguistics with primary attention to the comparison and reconstruction of Indo-European phonological systems.

Sp Qtr. 5 cl. Prereq: 601, and either 611 or written permission of instructor.

**802† Historical Linguistics II G 5**

Advanced work in the comparison and reconstruction of morphological and syntactic systems, primarily Indo-European; detailed examination of some of the results of past and current scholarship.

Wi Qtr. 5 cl. Prereq: 801.

**803† Topics in Indo-European G 5**

Study of various Indo-European languages and language families and exploration in depth of specific problems in Indo-European grammar.

5 cl. Prereq: 802. Repeatable to a maximum of 30 cr hrs.

**809 Seminar in Morphology G 3, 5**

Advanced topics in morphological analysis.

Arr. Prereq: 609. Repeatable to a maximum of 30 cr hrs.

**812 Seminar in Semantics G 5**

Accounts of semantic judgments in languages, especially within the theory of generative grammar; relationships between syntax, semantics, and language use.

Wi Qtr. 5 cl. Prereq: 602.02; a course in symbolic logic recommended. Repeatable to a maximum of 30 cr hrs.

**814 Seminar in Pragmatics G 5**

An intensive examination of one or more major problems in pragmatics, such as speech acts, implicature, or presupposition.

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**820 Seminar in Syntax G 5**

Advanced topics in syntactic analysis.

Au, Wi, Sp Qtrs. Prereq: 602.02. Repeatable to a maximum of 30 cr hrs.

**821 Seminar in Phonology G 5**

Advanced topics in phonological analysis.

Wi, Sp Qtrs. Prereq: 603.02. Repeatable to a maximum of 30 cr hrs.

**822\* Seminar in Historical Linguistics G 5**

Advanced topics in methods and principles of diachronic analysis.

Au Qtr. Prereq: 611 or permission of instructor. Repeatable to a maximum of 30 cr hrs.

**825 Seminar in Advanced Phonetics G 5**

Study of specific problems in articulatory and acoustic phonetics at an advanced level.

Prereq: 600. Repeatable to a maximum of 30 cr hrs.

**830 Teaching Introductory Linguistics G 3**

Designed to train instructors in the techniques and materials used to teach introductory linguistics courses.

Sp Qtr. 3 cl. Prereq: 601 or equiv.

**861 Seminar in Sociolinguistics G 3-5**

Advanced topics in sociolinguistics.

Arr. Prereq: 661. Repeatable to a maximum of 30 cr hrs.

**871† Seminar in Psycholinguistics G 3-5**

Advanced topics in psycholinguistics.

Sp Qtr. Arr. Prereq: 671. Repeatable to a maximum of 30 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**993 Individual Studies G 1-5**

Assigned reading and individual research.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**999 Research in Linguistics G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Master of Business Administration

001 Page Hall, 1810 College Road, 292-8511

**800 Financial Accounting and Reporting G 4**

Mechanics of income statement, balance sheet, and fund flows; accounting policy choices; financial statement analysis using fund flows; ratios, quality of earnings, sustainable growth rates, and inflation adjustments.

Au Qtr. Prereq: Enrollment in the structured MBA.

**801 Accounting for Decision Making G 4**

Cost data for inventory valuation; cost data for decision making (pricing, product-mix, make or buy); cost data for performance evaluation and control.

Au, Wi Qtrs. Prereq: Enrollment in the structured MBA.

**810 Financial Management G 4**

The development of an understanding of financial terminology, instruments, and foundations for analyzing and dealing with the financial management problems of business enterprises.

Wi Qtr. Prereq: Enrollment in structured MBA.

**811 Financial Decision Making G 4**

Analysis of financial management through case study; financial concepts and techniques used to identify problems, feasible alternatives, and recommendations of best course of action.

Wi, Sp Qtrs. Prereq: Enrollment in structured MBA.

**812 Managerial Economics G 4**

Introduction to microeconomic theory of demand and supply, including cost and production functions; applications for management decision making and government relations.

Au Qtr. 2 2-hr cl. Prereq: Enrollment in structured MBA Program.

**813. National Business Conditions Analysis G 4**

Analysis of general economic conditions and their relation to decisions of the firm; methods for decision support and strategic planning.

Su Qtr. 2 2-hr cl. Prereq: Enrollment in structured MBA Program.

**827 Teamwork and Leadership Laboratory G 1**

Teaches students how to function effectively as members of a team and how to exercise appropriate leadership in small groups.

Au, Wi, Sp Qtrs. 1 cl, 2-hr lab. Prereq: Enrollment in MBA program. Repeatable to a maximum of 6 cr hrs.

**831 Information Systems for Management Decision Making G 4**

The study of the role of the information systems function in organizations and the role of information in the management decision-making process.

Sp, Su Qtrs. Prereq: Enrollment in structured MBA.

**840 Marketing Management G 4**

Focuses on the interrelated elements of the marketing mix, its relationship with the other functional areas of management, and marketing responses to the external environment.

Wi, Sp Qtrs. Prereq: Enrollment in structured MBA.

**842 Product Management Strategy G 4**

Comprehensive examination of product and communication design decisions facing product managers in consumer and industrial firms; case studies and industry-sponsored project; new product development and positioning.

Wi Qtr. Prereq: 840 or equiv and enrollment in structured MBA; others with permission of instructor.

**843 Sales and Channel Management G 4**

Activities and problems of first-line sales manager; organizing the sales force, recruiting, training, compensating and motivating the sales force, forecasting, and territory design.

Sp Qtr. Prereq: 840 or Bus-Mktg 850, or permission of instructor.

**844 Applied Marketing Planning G 4**

Basic, practical elements of integrated strategic planning, current, and future planning techniques.

Au Qtr. Prereq: 840 or equiv and enrollment in structured MBA, or permission of instructor.

**845 International Marketing Strategy G 4**

Analysis of strategic, political, and philosophical issues faced by management and governments involved in international trade; emphasis on case analysis.

Sp Qtr. Prereq: 840 or Bus-Mktg 850 or permission of instructor; and Bus-Adm 856.

**850 Operations Management G 4**

Introduction to basic operations principles; exploration of major operating problems; strategic and tactical decision making; emphasis on determination of policy for managing productive resources; role of operations manager.

Sp Qtr. Prereq: Enrollment in structured MBA.

**860 Management and Individual Behavior G 4**

An overview of factors that influence individual work performance and techniques to improve it; analytical frameworks for determining effectiveness of given techniques in specific circumstances.

Au Qtr. Prereq: Enrollment in structured MBA.

**870 Statistical Analysis for Decision Making G 4**

Introduction to statistical inference and its use in decision making; major emphasis on achieving an application-oriented understanding of regression analysis.

Au Qtr. Prereq: Enrollment in structured MBA.

**871 Modeling for Decision Making G 4**

The use of quantitative techniques in practical decision-making situation; emphasis on concepts with relatively little mathematics utilized to describe the techniques.

Wi Qtr. 2 2-hr cl. Prereq: Enrollment in structured MBA.

**880 Legal and Regulatory Environment G 4**

Focuses on the application of law to managerial decisions; designed to provide an appreciation and understanding of the relationship between legal and business strategy.

Sp Qtr. 2 2-hr cl. Prereq: Enrollment in structured MBA.

**893 Individual Studies G 1-5**

Individual study projects in selected areas in business not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

**894 Group Studies G 1-5**

Students are given an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 16 cr hrs.

**980 Strategy Formulation and Implementation I G 4**

Introduction to the nature of corporate strategy, development of a conceptual framework for understanding competition in industries, and the factors that shape competitive success or failure.

Au, Wi Qtrs. Prereq: Successful completion of the 1st yr of structured MBA.

**981 Strategy Formulation and Implementation II G 4**

Introduction to the strategic significance of social, political, and governmental forces as well as the role financial control systems play in implementing and evaluating strategy.

Wi, Sp Qtrs. Prereq: 980.

**982 Strategy Implementation G 2-8**

Focuses on the role of top management in implementing strategy; special emphasis on organizational culture, management style, and the nature of decisions.

Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in structured MBA program. Repeatable to a maximum of 8 cr hrs.

# Materials Science and Engineering

177 Watts Hall, 2041 College Road, 292-2553

## 401 Materials Thermodynamics U 4

First three laws of thermodynamics; phase equilibria; reaction equilibria; solution theory; phase diagrams.

Sp Qtr. 3 1-hr lec, 1 2-hr rec. Prereq: Physics 132, Math 254 and minimum CPHR of 2.0; prereq or concur: Chem 125.

## 405 Introduction to Materials Science and Engineering U 3

Structure, processing, properties, and applications of metals, ceramics, polymers, and composite materials.

Au, Wi, Sp Qtrs. 3 1-hr cl, 1 1-hr rec. Prereq: Chem 125, Math 152, and Physics 132.

## 489 Professional Practice in Industry U 2

Preparation of a comprehensive report based on employment experience in a co-op job in industry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to co-op program. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

## 521 Chemistry of Materials

### 521.01 Chemistry of Materials U 3

Stoichiometry and heat balances for reactions and processes. Thermodynamics and kinetics of selected reactions.

Au Qtr. 3 1-hr cl. Prereq: 401 and 405.

### 521.02 Materials Chemistry Laboratory I U 2

Understanding of phenomena related to diffusion and kinetics.

Au Qtr. 1-hr lecture and 2-hr lab. Prereq: 521.01 or concurrent registration.

## 522 Transport Phenomena in Materials Processing

### 522.01 Transport Phenomena in Materials Processing U 3

Fluid flow, heat, and mass transfer as applied to materials processes.

Wi Qtr. 3 1-hr cl. Prereq: 521.01.

### 522.02 Materials Chemistry Lab II U 2

Techniques related to characterization of particles, flow behavior, and temperature measurement.

Wi Qtr. 1-hr lecture and 2-hr lab. Prereq: 521.02 and 522.01 or concurrent registration.

## 523 Ceramic Phase Equilibria U G 3

Principles of phase diagrams, use of equilibrium diagrams in ceramic engineering.

Sp Qtr. 3 cl. Prereq: 401, 405.

## 541 Structure I

### 541.01 Materials Structure I U 3

Crystal structure and defects in metals, ceramics, and polymers.

Au Qtr. 3 1-hr cl. Prereq: 401, 405.

### 541.02 Materials Structure Laboratory I U 2

Laboratory experiments and report writing.

Au Qtr. 1-hr lecture and 2 2-hr lab. Prereq: 541.01 or concurrent registration.

## 542 Structure II

### 542.01 Materials Structure II U G 3

Phase equilibria, transformations, and relation to microstructures.

Wi Qtr. 3 1-hr cl. Prereq: 541.01.

### 542.02 Materials Structure Laboratory II U G 2

Experiments and report writing in support of MSE 542.01.

Wi Qtr. 1-hr lecture and 2-hr lab. Prereq: 541.02 and 542.01 or concurrent registration.

## 543 Materials Structure III U G 3

Structural transformations in materials. Thermodynamics and kinetics of nucleation, growth, sintering, precipitation, and martensitic reactions.

Sp Qtr. 3 1-hr cl. Prereq: 542.01.

## 561 Mechanical Properties of Engineering Materials U G 3

Continuum and microstructural aspects of mechanical behavior; elastic and plastic behavior under simple and combined stress systems.

Wi Qtr. 3 1-hr cl. Prereq: 541.01, and Eng Mech 440.

## 562 Failure of Engineering Materials

### 562.01 Failure of Engineering Materials U G 3

Fundamentals of brittle and ductile failure; continuum and microstructural aspects.

Sp Qtr. 3 1-hr cl. Prereq: 561.

### 562.02 Mechanical Properties Laboratory U 2

Selected laboratory experiments of elastic properties, plastic properties, and failure of engineering materials.

Sp Qtr. 1 hr lec, 2 hr lab. Prereq: 562.01 or concurrent registration.

## 565 Crystal Mechanics U G 3

Relationship of microstructure and mechanical properties of crystalline materials.

Sp Qtr. 3 cl. Prereq: 542.01 and 561.

## 571 Characterization of Materials U G 3

Techniques and applications of x-ray diffraction and scanning electron microscopy.

Sp Qtr. 1 3-hr cl. Prereq: 543 or concurrent registration.

## 589 Industrial Experience U 2

This course is graded S/U.

### 589.01 Industrial Experience in Ceramic Engineering

Ten weeks industrial experience or its equiv in a ceramic manufacturing, research, or development organization; grade determined on written report of experience.

Su, Au, Wi, Sp Qtrs. Not available for technical elective cr. Repeatable to a maximum of 4 cr hrs including cr hrs earned in Ceram En 589.

### 589.02 Industrial Experience in Metallurgical Engineering

Register for course and submit report on experience during the quarter following the one in which industrial experience was obtained.

Su, Au, Wi, Sp Qtrs. 2 cr hrs for each summer's work. Repeatable to a maximum of 8 cr hrs including cr hrs earned in Ceram En 489. Register for course and submit report on experience during the Autumn Quarter following the summer in which industrial experience was obtained; one summer or 10 weeks of approved work in metallurgical industries. This course is graded S/U.

## 611 Metal Processing (Casting & Powder Metallurgy) U G 3

Near net shape manufacturing via solidification and powder metallurgy methods.

Sp Qtr. 2 1-hr. cl., 1 2-hr. lab. Prereq: 522.01 and 543.

## 612 Structure of Materials U G 3

Structure of crystalline materials including silicates and technical ceramics, crystal chemistry and physics.

Au Qtr. 3 cl. Prereq: 405, Geol Sci 414

## 621 Materials Issues in Microelectronics

### 621.01 Materials Issues in Microelectronics U G 3

Micro fabrication with emphasis on processing, structure and stability of materials in microelectronics.

Wi Qtr. 1 3-hr cl. Prereq: 543 and 671.

### 621.02 Microelectronics Processing Lab U G 1

Laboratory experience in microelectronics processing.

Wi Qtr. 1/2-hr lecture and 2 1/2-hr lab. Prereq: 621.01 or concurrent registration.

## 623 Ceramic Raw Materials U G 3

Ceramic raw materials including physical and chemical characteristics; powder preparation, mixing, milling, and batch calculations.

Au Qtr. 3 cl. Prereq: 543.

## 624 Forming of Ceramics U G 3

Theoretical and practical aspects of ceramic processing before firing. Relationship between forming methods and the flow properties of particulate systems.

Wi Qtr. 3 cl. Prereq: 623.

## 625 Thermal Processing of Ceramics U G 3

Ceramic drying and firing processes. Emphasis is on microstructure development: calcining, solid state sintering, liquid phase sintering, vitrification, and grain growth.

Sp Qtr. 3 cl. Prereq: 624.

## 630 Process Metallurgy U G 3

Mass transfer as applied to metallurgical processes, reactor design, analysis and design of processes for extracting and refining metals.

Sp Qtr. 3 cl. Prereq: 522.01.

## 632 Glass Science U G 3

The science of glass including glass structure and formation related to composition, kinetics of crystallization, phase separation, glass transition, and viscosity.

Wi Qtr. 3 cl. Prereq: 612.

## 642 Structure and Properties of Solid Polymers U G 3

Structure and properties of solid polymers; polymer processing will be briefly addressed.

Au Qtr. 3 1-hr cl. Prereq: 405.

## 651 Physical Metallurgy of Steel

### 651.01 Physical Metallurgy of Steel U G 3

Physical metallurgy of plain carbon and alloy steels.

Au Qtr. 3 cl. Prereq: 542.01.

**651.02 Microstructures of Metallic Materials U G 1**

Laboratory studies of microstructural characteristics of metallic materials and the effects of prior treatments or methods of manufacture.

Wi Qtr. 1 3-hr lab. Prereq: 542.01 and 651.01 or concurrent registration.

**653 Ceramic Properties and Processing Laboratory U G 1**

Processing and properties of ceramic materials.

Wi Qtr. 1 3-hr lab. Prereq: 521.02, 522.02, and 562.02.

**655 Non-Ferrous Metallurgy U G 3**

Physical metallurgy of important non-ferrous alloys; their properties and applications.

Au Qtr. 3 cl. Prereq: 565.

**666 Deformation Processing U G 3**

Continuum behavior of metals; analysis of common forming operations; slab calculations, ideal work methods, upper bound analysis, other numerical methods.

Wi Qtr. 3 cl. Prereq: 562.01.

**671 Electronic Properties of Materials I U G 3**

Electronic theory of solids, metals, semiconductors, and insulators. Principles and fabrication of simple semiconductor devices.

Au Qtr. 3 cl. Prereq: 543, Physics 133.

**672 Electronic Properties of Materials II U G 3**

Continuation of Materials Science and Eng 671. Magnetic, optical, dielectric, and superconducting properties of materials. Behavior of simple devices based on these properties. Materials issues in device fabrication.

Wi Qtr. 3 cl. Prereq: 671.

**680 Analysis and Modeling in Materials Science U G 3**

Applications of analytical and numeric mathematical methods to problems in materials science.

Au Qtr. 3 cl. Prereq: Math 255, En Graph 167 or equiv. (FORTRAN)

**681 Corrosion U G 3**

Principles of corrosion engineering; definitions, types of corrosive attack and methods of minimization and prevention.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: Eng 4th yr standing or permission of instructor.

**684 Structure and Properties of Composite Materials U G 3**

Structure and properties of polymer matrix, metal matrix, and ceramic matrix composites. Tailoring of properties by composite design will be emphasized.

Wi Qtr. 3 1-hr cl. Prereq: 543 and 561.

**685 Materials Selection U G 3**

Case studies in materials selection and substitution of competing materials.

Sp Qtr. 3 cl. Prereq: 4th yr standing in Engineering.

**693 Individual Studies U G 1-6**

Investigations in areas of advanced non-thesis research. Library and/or research investigations are under the close direction of instructors. Comprehensive report required.

Su, Au, Wi, Sp Qtrs. arr. Conf, library, and lab work. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs including cr hrs earned in Ceram En 693. This course is graded S/U.

**694 Group Studies U G 1-6**

Special topics.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs including cr hrs earned in Ceram En 694 and Metal En 694.

**695 Senior Design Project**

An in-depth design project to foster independent thinking and to develop problem solving skills.

Au, Wi, Sp Qtrs. Arr. Prereq: Sr Standing in MSE. Must be scheduled in the first 2 qtrs of academic year of projected graduation.

**695.01 Senior Design Project in Materials Science and Engineering I U 1**

Analysis of design problem and formulation of approach to solve problem.

**695.02 Senior Design Project II U 2**

Execution of design projects with written and oral reports.

Prereq: 695.01.

**711\* Solidification of Metals and Alloys U G 3**

Heat and mass transport associated with solidification; grain morphologies and composition in casting and welds.

Au Qtr. 3 cl. Prereq: 542.01.

**715 Principles of the Characterization of Materials U G 3**

Fundamentals of beam-solid interactions, and their application to the characterization of materials.

Sp Qtr. 3 cl. Prereq: Math 415 or grad status.

**721\* Metallurgical Transport Phenomena U G 3**

Momentum, mass, and heat transport as related to metallurgical processing with computer computation of complex problems.

Sp Qtr. 3 cl. Prereq: 521.01 or 525, En Graph 167 or 200, and Math 255 or 415.

**730 Thermodynamics of Materials U G 4**

Thermodynamics of mixtures and phase equilibria relevant to metallurgy and materials science.

Au Qtr. 2 2-hr cl. Prereq: 522.01, 542.01.

**731\* Physical Properties of Glass U G 3**

Viscosity, chemical durability and thermal, electrical, optical, and mechanical properties of commercial glasses. Effects of thermal history and composition.

Sp Qtr. 3 cl. Prereq: 632.

**732 Kinetics and Diffusion U G 4**

Statistical mechanics of equilibrium systems-metallurgical examples; theory and analyses of materials kinetics.

Wi Qtr. 2 2-hr cl. Prereq: 730.

**7351\* Advanced Corrosion U G 3**

Theories and mechanisms of corrosion.

Wi Qtr. 3 cl. Prereq: 681.

**736\* High Temperature Corrosion U G 3**

Corrosion of metals and alloys in high-temperature gases and salts.

Sp Qtr. 3 cl. Prereq: 401.

**741 Transmission Electron Microscopy Laboratory G 1**

Application of transmission electron microscopy of materials with emphasis on practical experimental methods.

Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq: 715 or equiv.

**745 Structure of Materials U G 4**

Crystallography and crystal structures, effect of symmetry on properties of crystals, and structures of amorphous materials.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in MatSc&En or permission of instructor.

**750 Materials Microstructures U G 3**

Nature and kinetics of microstructural changes produced by cold work and subsequent aging in ductile materials. Homogeneous and heterogeneous nucleation. Dislocations in crystalline materials with emphasis of FCC materials.

Wi Qtr. 2 1 1/2-hr cl. Prereq: Grad standing in MatSc&En or permission of instructor.

**765 Mechanical Behavior of Materials G 3**

Mechanical response of materials to loads and deformation.

Sp Qtr. 2 1 1/2-hr cl. Prereq: Grad standing in MatSc&En or permission of instructor.

**793 Individual Studies U G 1-6**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. This course is graded S/U.

**795 Graduate Seminar and Colloquium U G 1**

Technical presentations by students, faculty, and visitors.

Au, Wi, Sp Qtrs. A total of up to 6 hrs can be applied toward MS degree; a total of up to 12 hrs can be applied to PhD degree. This course is graded S/U.

**831\* Advanced Physics and Chemistry of Glasses G 3**

Glass structure and formation related composition, kinetics of crystallization, phase separation, glass transition. Relation of physical properties to glass structure and composition.

Au Qtr. 3 cl. Prereq: 632 or equiv, or permission of instructor.

**835\* Point Defects in Crystalline Materials G 3**

A thermodynamic and electrochemical treatment of the formation, concentrations, mobilities, and interactions of atomic, ionic, and electronic point defects in materials at high temperatures.

Wi Qtr. 3 cl. Prereq: 730 or permission of instructor.

**855\* Electron Diffraction G 3**

Construction, image formation, and performance of electron microscopes. Electron diffraction in crystals. Wave-Optical and Wave-Mechanical form.

Au Qtr. 2 1 1/2-hr cl. Prereq: 715.

**861\* Plasticity G 3**

Continuum and micromechanisms of plastic deformation.

Au Qtr. 2 1 1/2-hr cl. Prereq or concur: 765, or permission of instructor.

**862\* Elasticity and Brittle Fracture G 3**

Interaction of elastic defects in crystalline and continuum solids.

Au Qtr. 2 1 1/2-hr cl. Prereq or concur: 765, or permission of instructor.

**863\* Elevated Temperature Deformation G 3**

Micromechanics of elevated temperature deformation.

Wi Qtr. 2 1½-hr cl. Prereq or concur: 765, or permission of instructor.

**893 Individual Studies G 1-6**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs including cr hrs earned in Ceram En 893. This course is graded S/U.

**894 Group Studies G 1-6**

Special advanced topics.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 12 cr hrs.

**999 Research in Materials Science and Engineering G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Mathematics

Mathematics Tower, 231 West 18th Avenue, 292-4975

**050 Precollege Mathematics I U 5**

Arithmetic of fractions and decimals, basic algebra, graphing equations, geometry, exponents, applications of exponents, lines and slopes, area.

Su, Au, Wi, Sp Qtrs. 5 cl. Credit will not count toward graduation in any degree program.

**075 Precollege Mathematics II U 4**

Systems of equations, arithmetic of polynomials, factoring, fractional equations, variation, quadratic equations, functions, graphs, right angle trig. Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 050 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for any math course except 050. Credit will not count toward graduation in any degree program.

**076 Reentry Precollege Mathematics U 4**

Systems of equations, arithmetic of polynomials, factoring, fractional equations, variation, quadratic equations, functions, graphs, and right angle trig.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: At least one yr of high school algebra, out of high school for 5 or more yrs at time of university enrollment, no formal training in math in the past 5 yrs, and written permission of Dept of Mathematics Office. Not open to students with a mark in any Ohio State math course within the past 5 yrs. Credit will not count toward graduation in any degree program.

**104 Basic College Mathematics U 5**

Systems of equations, arithmetic of polynomials, rational expressions, factoring, fractional equations, inequalities, exponents, quadratic equations, absolute values, functions, and graphs.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 050 or satisfactory score on Ohio State Math Placement Test or permission of dept. Not open to students with credit for 116, 130, or 148. Credit may not count toward graduation in some degree programs.

**105 Mathematics for Elementary Teachers I U 5**

Development of basic ideas of arithmetic, algebra, and geometry as appropriate for elementary school teachers.

Au, Wi Qtrs. 5 cl. Prereq: 075 or 076 or satisfactory score on Ohio State Math Placement Test.

**106 Mathematics for Elementary Teachers II U 5**

Continuation of 105.

Wi, Sp Qtrs. 5 cl. Prereq: 105 or written permission of dept.

**107 Topics in Mathematics for Elementary Teachers U 5**

Further topics in mathematics selected by the instructors to broaden the mathematical perspectives of elementary teachers.

Sp Qtr. 5 cl. Prereq: 106 or written permission of dept.

**116 Survey of College Algebra U 5**

The sequence 116-117 treats topics applicable to non-physical sciences; topics in 116 include college algebra, analytic geometry, linear algebra, and linear programming.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 075 or 076 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 130, 148, 150, or math courses having these as prereqs.

**117 Survey of Calculus U 5**

An introduction to differential and integral calculus.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 116 or 130 or 148 or 150 or equiv with written permission of dept. Not open to students with credit for 132 or 151.

**130 Elements of Algebra U 4**

Equations, inequalities, absolute value, functions, exponential and logarithmic functions, systems of equations, and matrix algebra, applications to business.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 075 or 076 or 102 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 116, 148, or 150. This course is available for EM credit.

**131 Elements of Calculus I U 4**

Limits, tangent lines, continuity, differentiability, derivatives of the logarithmic and exponential functions, graphing techniques, applications of calculus to business.

Su, Au, Wi, Sp Qtrs 4 cl. Prereq: 130 or 148 or 150 or written permission of dept. Not open to students with credit for 151. This course is available for EM credit.

**132 Elements of Calculus II U 4**

Antidifferentiation, definite integral, integral of the logarithmic and exponential functions, techniques of integration, areas, partial derivatives, Lagrange multipliers, applications of calculus to business.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 131 or 151 or written permission of dept. Not open to students with credit for 152. This course is available for EM credit.

**148 College Algebra U 4**

Rational exponents, inequalities, functions, graphs of polynomial and rational functions, conic sections, zeros of polynomials.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 104 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 150. This course is available for EM credit.

**150 Elementary Functions U 5**

Inverse functions, logarithmic, exponential and trigonometric functions, and their graphs; complex numbers.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 148 or satisfactory score on Ohio State Math Placement Test or permission of dept. This course is available for EM credit.

**151 Calculus and Analytic Geometry U 5**

Limits, continuity, derivatives, Mean Value theorem, extrema, curve sketching, related rates, differentiation of the trig, log, and exponential functions.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 150 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 161. This course is available for EM credit.

**152 Calculus and Analytic Geometry U 5**

Integral, area, fundamental theorems of calculus, logarithmic and exponential functions, trigonometric and inverse trigonometric functions, methods of integration, applications of integration, polar coordinates.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 151. Not open to students with credit for 162. This course is available for EM credit.

**153 Calculus and Analytic Geometry U 5**

Indeterminate forms, Taylor's formula, improper integrals, infinite series, parametric curves, and vectors in the plane; vectors, curves, and surfaces in space.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 152. Not open to students with credit for 263. This course is available for EM credit.

**161 Accelerated Calculus with Analytic Geometry U 5**

Functions, limits and continuity, derivatives, applications of the derivative, the integral, inverse functions.

Au Qtr. 5 cl. H161 (honors) may be available to students enrolled in an honors program; others by written permission of dept. Prereq: Course Code L placement and high school calculus experience, or permission of dept. Not open to students with credit for 152. The sequence 161-162-263 covers calculus at an accelerated pace for students with superior algebraic and geometric skills, with previous calculus experience.

**162 Accelerated Calculus with Analytic Geometry U 5**

Techniques of integration; improper integrals; applications of the integral; polynomial approximations and Taylor's theorem; infinite sequences and series; tests for convergence; vectors, lines and planes.

Wi Qtr. 5 cl. H162 (honors) may be available to students enrolled in an honors program; others by written permission of dept. Prereq: 161 or written permission of Math Counseling Office. Prereq for H162: H161 with a grade of C or better or written permission of Honors Committee chairperson. Not open to students with credit for 153.

**187 Topics in Mathematics U 2-5**

An enrichment course for interested and capable students.

Au Qtr. H187 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**H190 Elementary Analysis I U 5**

Special course sequence for superior students.

Au Qtr. 5 cl. Prereq: Permission of dept. H190, H191, and H264 substitute for 151, 152, 153, 254, and 551.

**H191 Elementary Analysis II U 5**

Continuation of H190.

Wi Qtr. 5 cl. Prereq: H190 with a grade of C or better or written permission of Honors Committee chairperson.

**194 Group Studies in Mathematics U 2-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs.

**254 Calculus and Analytic Geometry U 5**

Partial differentiation, Lagrange multipliers, multiple integrals, line integrals, and Green's theorem.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 153. Not open to students with credit for 263. This course is available for EM credit.

**255 Differential Equations and Their Applications U 5**

Basic concepts and methods in solving ordinary differential equations, first and second order, linear differential equations, series solutions, numerical methods, Laplace transforms, physical applications.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 254. Not open to students with credit for 415 or 556.

**263 Accelerated Calculus with Analytic Geometry U 5**

Multivariable calculus (vector approach), line and surface integrals, vector differential operators.

Sp Qtr. 5 cl. H263 (honors) may be available to students enrolled in an honors program; others by written permission of dept. Prereq: 162 or written permission of Math Counseling Office. Prereq for H263: H162 with a grade of C or better or written permission of Honors Committee chairperson.

**H264 Elementary Analysis III U 5**

Continuation of H191; a rigorous treatment of multivariable calculus including gradients, multiple integrals, line and surface integrals, Green's theorem, the divergence theorem, and Stokes' theorem.

Sp Qtr. 5 cl. Prereq: H191 with a grade of C or better or written permission of Honors Committee chairperson.

**283 Number Theory U 3-6**

An intensive introduction to mathematics as problem-solving; experimentation, conjecture and proof; divisibility, quadratic fields, geometry of numbers.

Su Qtr. Prereq: Written permission of instructor and performance on a take-home problem set. Each decimal subdivision repeatable to a maximum of 6 cr hrs.

**283.01 Lectures in Number Theory**

5 cl for 8 wks.

**283.02 Seminar in Number Theory**

3 1-hr seminar/wk for 8 wks.

**294 Special Topics in Mathematics U 2-5**

Designed to give groups of able students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. H294 (honors) may be available to students in an honors program; others by permission of Honors Committee chairperson. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs.

**345 Foundations of Higher Mathematics U 4**

Designed to prepare students for higher mathematics; an introduction to logic, proof techniques, set theory, number theory, integers, real numbers.

Au, Sp Qtrs. 4 cl. Prereq: 254 or equiv with written permission of dept.

**366 Discrete Mathematical Structures I U 3**

Mathematical formalization and reasoning, logic, and boolean algebra; sets, functions, relations, recursive definitions, and mathematical induction; and elementary counting principles.

Su (1st term) Au, Wi, Sp Qtrs. 3 cl. Prereq: 132 or 152 or permission of dept.

**415 Ordinary and Partial Differential Equations U 4**

Ordinary, partial, linear, and nonlinear differential equations; Fourier series; boundary value problems; and Bessel functions.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: 254. Not open to students with credit for 255.

**416+ Vector Analysis and Complex Variables U 5**

Vector algebra and vector operators, line integrals, analytic functions, complex integral theorems, power series, residues, and conformal mapping.

Au Qtr. 5 cl. Prereq: 254. Not open to students with credit for 513, 514, 551, or 552.

**471+ Matrices and Linear Algebra U 5**

Matrices, systems of equations,  $R^n$ , determinants, vector spaces; applications.

Wi Qtr. 5 cl. Prereq: 153 or equiv with written permission of dept. Not open to students with credit for 568 or 571.

**H487 Advanced Problem Solving U 2**

An advanced enrichment course for interested and capable students.

Au Qtr. 2 cl. Prereq: Permission of dept. Not open to students with 6 cr hrs in 487. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**504 History of Mathematics U G 5**

Development of mathematics from primitive origins to present form; topics include: development of arithmetic, algebra, geometry, trigonometry, and calculus.

Sp Qtr. 5 cl. Prereq: 580 or 568 or 507 or equiv with written permission of dept.

**507 Advanced Geometry U G 5**

Advanced topics from Euclidean Geometry.

Au, Wi Qtrs. 5 cl. Prereq: 152.

**510 Topics in Mathematics for Elementary School Teachers U G 2-5**

Special topics in mathematics appropriate for teachers in the primary and intermediate grades.

Su, Au, Wi, Sp Qtrs. Prereq: 1 yr teaching experience or permission of instructor. Repeatable to a maximum of 10 cr hrs for each decimal subdivision with written permission of dept. Designed for in-service teachers.

**510.01 Geometry****510.02 Properties of Numbers****510.03 Numerical Methods****512 Partial Differential Equations and Boundary Value Problems U G 3**

Fourier series, orthogonality relations, vibrating string, steady state heat, Laplace transform, and applications.

Su (1st term), Au, Wi, Sp Qtrs. 3 cl. Prereq: 255 or 415 or equiv with written permission of dept. Not open to students with credit for 557.

**513 Vector Analysis for Engineers U G 3**

Vector algebra, vector operators, line integrals, vector integral theorems; curvilinear coordinates; applications.

Au, Wi Qtrs. 3 cl. Prereq: 254. Not open to students with credit for 551.

**514 Complex Variables for Engineers U G 3**

Introduction to complex variables, analytic functions, complex integral theorems, power series, residues, conformal mapping.

Sp Qtr. 3 cl. Prereq: 254 or equiv with written permission of dept. Not open to students with credit for 416, 552, or 654.

**H520 Linear Algebra U 5**

Vector spaces, linear transformations, systems of equations, determinants, eigenvalues, spectral theorem, and Cayley-Hamilton theorem.

Au Qtr. 5 cl. Prereq: H263 with a grade of C or better, or H264 with a grade of C or better, or written permission of Honors Committee chairperson. Not open to students with credit for H290.

**H521 Differential Equations U 5**

Ordinary, linear and nonlinear differential equations, existence and uniqueness theorems, Fourier series, boundary value problems, systems, Laplace transforms, phase space, stability, and periodic orbits.

Wi Qtr. 5 cl. Prereq: H520 with a grade of C or better or written permission of Honors Committee chairperson. Not open to students with credit for H291.

**H522 Complex Analysis U 5**

Analytic functions, Cauchy integral theory, residue calculus, series representations, and conformal mapping.

Sp Qtr. 5 cl. Prereq: H521 with a grade of C or better or written permission of Honors Committee chairperson. Not open to students with credit for H292. The sequence H520-H521-H522 substitutes for 568 and 569; 255 or 415; 416 or 514 or 552.

**530 Probability I U G 3**

Combinatorial probability, random variables, independence, expectations, variance.

Au Qtr. 3 cl. Prereq: 254. Not open to students with credit for Stat 520.

**H540 Geometry and Calculus in Euclidean Spaces and on Manifolds I U G 5**

The topology of  $E^n$ , differentiation of vector valued functions, inverse and implicit function theorems, Riemann and Lebesgue integration in  $E^n$ .

Wi Qtr. 5 cl. Prereq: H290 or H520, or H263 and 569, or permission of instructor.

**H541 Geometry and Calculus in Euclidean Spaces and on Manifolds II U G 5**

Curves and line integrals in  $E^n$ , tensor and exterior algebras, differential forms, integration on manifolds, divergence and Stokes' theorem and applications.

Sp Qtr. 5 cl. Prereq: H540 or permission of instructor.

**547 Introductory Analysis I U G 3**

547-548-549 is an integrated sequence in advanced calculus covering sequences, limits, continuous functions, differentiation, Riemann integral; infinite series, sequences and series of functions, Taylor series, improper integrals.

Au, Wi Qtrs. 3 cl. Prereq: 345 or equiv with written permission of dept. Not open to students with credit for 615.

**548 Introductory Analysis II U G 3**

Continuation of 547.

Wi, Sp Qtrs. 3 cl. Prereq: 547 or equiv with written permission of dept.

**549 Introductory Analysis III U G 3**

Continuation of 548; the Riemann-Stieltjes integral; an introduction to the calculus of several variables.

Au, Sp Qtrs. 3 cl. Prereq: 548 or equiv with written permission of dept.

**551 Vector Analysis U G 5**

Vector operations in three dimensions, vector operators, surface area, the theorems of Green and Stokes, the divergence theorem; applications.

Au, Sp Qtrs. 5 cl. Prereq: 254. Not open to students with credit for 416 or 513.

**552 Introduction to the Theory of Functions of a Complex Variable U G 5**

Topics discussed include power series expansions, the formula of Cauchy, residues, conformal mappings, and elementary functions in the complex domain.

Su, Wi Qtrs. 5 cl. Prereq: 254. Not open to students with credit for 416 or 514.

**556 Differential Equations I U G 3**

Systems of linear, first-order differential equations, existence and uniqueness theorems, numerical methods, qualitative theory (phase plane analysis, linearization, stability, limit cycles), and physical applications.

Wi Qtr. 3 cl. Prereq: 255, prereq or concur 572.

**557 Differential Equations II U G 3**

Sturm-Liouville theory, partial differential equations in three or more variables, nonhomogeneous problems, Green's functions, physical applications.

Sp Qtr. 3 cl. Prereq: 345 or written permission of dept.

**560 Point-set Topology U G 4**

Sets and functions, metric spaces, topological spaces, subspaces, limits, closure, interior, sequences, convergence, separation axioms, continuity, connectedness, compactness, product spaces, Euclidean spaces.

Sp Qtr. 4 cl. Prereq: 345 or written permission of dept.

**566 Discrete Mathematical Structures II U G 3**

Algorithms, efficiency of algorithms, pigeonhole principle, combinatorial identities, inclusion-exclusion, general functions, graphs, Euler tours, Hamiltonian cycles, isomorphism, planarity, colorings, algorithms on weighted graphs, and networks.

Su (2nd term), Au, Wi, Sp Qtrs. 3 cl. Prereq: 366 or permission of dept.

**568 Introductory Linear Algebra I U G 3**

The space  $\mathbb{R}^n$  and its subspaces; matrices as mappings; matrix algebra; systems of equations; determinants; dot product in  $\mathbb{R}^n$ ; geometric interpretations.

Su (1st term), Au, Wi, Sp Qtrs. 3 cl. Prereq: 254 or equiv with written permission of dept. Not open to students with credit for 471 or 571 or 577.

**569 Introductory Linear Algebra II U G 3**

Vector spaces over  $\mathbb{R}$  and  $\mathbb{C}$ ; linear transformations; the polynomial ring  $\mathbb{R}[x]$ ; characteristic values and vectors; inner product spaces; quadratic form reduction; principal axis theorem.

Su (2nd term), Au, Wi, Sp Qtrs. 3 cl. Prereq: 568 or equiv with written permission of dept. Not open to students with credit for 572.

**571 Linear Algebra for Applications I U G 3**

Linear systems of equations; vector spaces, matrices, linear operators; inner products, projections and least squares, approximations or eigenvalue problems; applications.

Su (1st term), Au, Sp Qtrs. 3 cl. Prereq: 254. Not open to students with credit for 569 or 601.

**572 Linear Algebra for Applications II U G 3**

The eigenvalue problem or inner product spaces, projections and least squares approximation; classification of operators and quadratic forms; applications.

Su (2nd term), Wi Qtrs. 3 cl. Prereq: 571 or written permission of dept. Not open to students with credit for 601.

**573 Elementary Number Theory U G 5**

Utilization of concrete examples to introduce concepts of modern algebra; prime numbers, congruences, Diophantine equations, elementary combinatorial analysis.

Sp (odd-numbered yrs only) Qtr. 5 cl. Prereq: 153 or permission of dept.

**574 Geometry U G 5**

Euclidean and non-Euclidean geometry, emphasizing algebraic connection; Affine and projective planes, duality; topics from: geometry of groups; finite planes, Hilbert's postulates,  $n$ -dimensional spaces.

Sp (even-numbered yrs only) Qtr. 5 cl. Prereq: 568 or equiv with written permission of dept.

**575 Combinatorial Mathematics and Graph Theory U G 5**

Some classical puzzles of recreational mathematics; matching theory, graph theory, network flows, and optimization; enumeration techniques; combinatorial designs and coding theory.

Wi, Sp Qtrs. 5 cl. Prereq: 568 or written permission of dept.

**578 Discrete Mathematical Models U G 5**

Analysis and solution of various applied problems using discrete mathematical models; methods used include graph theory, linear optimization, Markov chains and queues.

Au, Sp Qtrs. 5 cl. Prereq: 530 or Stat 425 or equiv, 568, and Cptr/Inf 221.

**580 Algebra I U G 3**

The integrated algebra sequence 580-581-582 includes elementary number theory, group theory, vector spaces, and linear transformations, field theory.

Au, Wi Qtrs. 3 cl. Prereq: 345 and prereq or concur: 568 or equiv with written permission of dept. Not open to students with credit for 573, 613, or H590.

**581 Algebra II U G 3**

Continuation of 580.

Wi, Sp Qtrs. 3 cl. Prereq: 580.

**582 Algebra III U G 3**

Continuation of 581.

Au, Sp Qtrs. 3 cl. Prereq: 581.

**588 Practicum in Actuarial Science U 2**

Presentations by practicing actuaries on topics drawn from their fields of expertise.

Sp Qtr. 1 2-hr cl. Prereq: 3rd yr standing. Open only to actuarial science majors. Sitting for a professional actuarial examination in May while enrolled in this course is required. The deadline for submitting applications to take the actuarial examination may be prior to the start of Spring Quarter and is the responsibility of the student to meet. This course is graded S/U.

**H590 Algebraic Structures I U G 5**

Integers, congruence relations, structure preserving maps, topics from groups, rings, modules, vector spaces, fields.

Au Qtr. 5 cl. Prereq: H292 or H522 with a grade of C or better or written permission of Honors Committee chairperson. The sequence H590-H591-H592 substitutes for the sequence 580-581-582.

**H591 Algebraic Structures II U G 3**

A continuation of H590.

Wi Qtr. 3 cl. Prereq: H590 with a grade of C or better or written permission of Honors Committee chairperson.

**H592 Algebraic Structures III U G 3**

Continuation of H591; further topics in group and field theory and their interrelation; Galois theory.

Sp Qtr. 3 cl. Prereq: H591 with a grade of C or better or written permission of Honors Committee chairperson.

**593 Individual Studies U G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**594 Group Studies U 2-5**

Designed to give groups of advanced undergraduate students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. H594 (honors) may be available to students in an honors program; others by permission of Honors Committee chairperson. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**601 Mathematical Methods in Science I U G 5**

Real and complex vector spaces, inner product spaces, linear operators, matrices, eigenvalue problems, normal operators, real and Hermitian forms; applications to physics and engineering.

Au Qtr. 3 1½-hr cl. Prereq: 15 or hrs in math at the 400-500 level or permission of dept. The recommended preliminary courses are 514 and 513 or 551.

**602 Mathematical Methods in Science II U G 5**

Linear differential equations, solutions about singular points; Sturm-Liouville problems; Bessel functions, Legendre functions; Green's functions; Orthogonal expansions; Laplace's equation and boundary value problems.

Wi Qtr. 3 1½-hr cl. Prereq: 601.

**606 Introduction to Numerical Analysis of Partial Differential Equations U G 3**

Classification of partial differential equations; finite difference methods for elliptic, parabolic and hyperbolic PDE's; stability, convergence, error estimates; introduction to finite elements.

Sp Qtr. Prereq: 512 and 572 or equiv with permission of instructor.



**607 Essentials of Numerical Analysis U G 5**

Standard problems of numerical analysis, error analysis, and actual computational algorithms.

Su Qtr. 3 2-hr cl. Prereq: 548 or 652 or permission of the Graduate Studies Committee.

**610 Topics in Mathematics for Teachers**

Special topics in mathematics for teachers at the secondary level.

Su, Au, Wi, Sp Qtrs. Prereq: 1 yr teaching experience or permission of instructor. Each decimal subdivision, except 610.25, repeatable to a maximum of 10 or hrs with written permission of dept. Designed for in-service teachers.

**610.01 Geometry U G 1-5****610.02 Algebra U G 1-5****610.03 Approximation Methods U G 1-5****610.04 Probability U G 1-5****610.25 Special Projects U G 1**

Prereq: Enrollment in mathematics MA specialization or written permission of dept. This decimal subdivision (610.25) is graded S/U.

**611† Geometric Linear Algebra U G 4**

Two- and three-dimensional linear algebra over the real numbers; geometric interpretations, both Euclidean and affine.

Prereq: 568 or equiv with written permission of dept; enrollment in mathematics MA specialization. Recommended for secondary school teachers.

**612 Elementary Geometry from an Advanced Standpoint U G 4**

Axiomatic development of elementary geometry of plane and space, introduction to non-Euclidean geometry.

Wi Qtr. 2 2-hr cl. Prereq: 507 or equiv with written permission of dept; enrollment in mathematics MA specialization. Recommended for secondary teachers.

**613 Number Theory and Algebra U G 4**

Arithmetic and order properties of the integers, unique factorization, congruence arithmetic, Chinese Remainder Theorem, unit groups; polynomial algebra, roots of unity, non-unique factorization.

Au Qtr. 2 2-hr cl. Prereq: 580 or equiv with written permission of dept; enrollment in mathematics MA specialization. Not open to students with credit for 670. Recommended for secondary school teachers.

**614† Calculus from a Numerical Viewpoint U G 4**

A review of major concepts and theorems of differential and integral calculus using a numerical approach.

Prereq: 254 or equiv with written permission of dept; enrollment in mathematics MA specialization. Recommended for secondary school teachers.

**615 Foundations of Calculus U G 4**

Real number system, Dedekind cuts, basic set theory, introductory metric topology, connectedness, limits, continuity, the derivative, properties of differentiable functions, Riemann sums, integration.

Sp Qtr. 2 2-hr cl. Prereq: 614 or equiv with written permission of dept; enrollment in mathematics MA specialization. Not open to students with credit for 651. Recommended for secondary school teachers.

**616 Numerical Methods in Actuarial Mathematics U G 4**

Finite differences, difference operators, interpolation, summation, difference equations; applications to actuarial science and finance.

Au Qtr. 2 2-hr cl. Prereq: 254 and 471 or 569; or permission of instructor.

**618 Theory of Interest U G 3**

Mathematical techniques of use in analyzing financial transactions involving interest: measurement of interest, force of interest, annuities-certain, applications to actuarial science.

Wi Qtr. 2 1 1/4-hr cl. Prereq: 254 or permission of instructor.

**621† Probability U G 4**

A problem oriented approach to major probability concepts: independence, conditional probabilities, expected values, binomial, normal, and other distributions, law of large numbers.

Prereq: 254 or equiv with written permission of dept; enrollment in mathematics MA specialization. Recommended for secondary school teachers.

**630 Mathematics of Life Contingencies I U G 3**

Individual risk models; survival distributions and life tables; life insurance and life annuities.

Au Qtr. 2 1 1/4-hr cl. Prereq: 618 and Stat 520 or equiv, or permission of instructor.

**631 Mathematics of Life Contingencies II U G 3**

Continuation of 630; net premiums and net premium reserves; multiple life functions; multiple decrement models.

Wi Qtr. 2 1 1/4-hr cl. Prereq: 630.

**632 Mathematics of Life Contingencies III U G 3**

Continuation of 631; valuation theory for pension plans; insurance models including expenses; nonforfeiture benefits and dividends; topics of current interest in life and casualty contingencies.

Sp Qtr. 2 1 1/4-hr cl. Prereq: 631.

**634 Linear Mathematical Models U G 4**

Linear equations, inequalities, convex sets, matrix algebra, linear programming, duality, applications of linear mathematical models to business, transportation flow, and the social and behavioral sciences.

Au Qtr. 4 cl. Prereq: 117 or 131 or 151 or permission of dept.

**635 Game Theory U G 3**

Concept of a game, minimax theorem; linear programming.

Wi Qtr. 3 cl. Prereq: 568 or equiv or permission of dept.

**640 Introductory Topology U G 3**

The topology of the line, plane, Euclidean  $n$ -space, and metric spaces; emphasis on elementary ideas in topology.

Su Qtr. 3 cl. Prereq: 254 or equiv. Not open to students with credit for 655.

**645 Foundations of Higher Mathematics U G 3**

Introduction to logic, set theory, and methods of proof; the real numbers, natural numbers, induction, well-ordering, the integers, uncountability of the reals.

Su Qtr. 3 cl. Prereq: Grad standing in math or written permission of dept chairperson.

**647 Set Theory U G 3**

Axiomatic set theory, transfinite induction and theory of ordinals, order type of characterizations, cardinal arithmetic and structure, and principles of choice.

Au Qtr. 3 cl. Prereq: 547 or 580 or equiv with permission of dept.

**648 Mathematical Logic I U G 3**

The syntax and semantics of sentential logic and first order logic; completeness and compactness theorems for first order logic.

Wi Qtr. 3 cl.

**649 Mathematical Logic II U G 3**

Continuation of 648; decidability and undecidability of systems and structures for number theory; Gödel's incompleteness theorems and recursive functions; second order logic.

Sp Qtr. 3 cl. Prereq: 648 or permission of instructor.

**650 Principles of Mathematical Analysis U G 5**

Riemann-Stieltjes integral; uniform convergence and interchange of limit processes, special functions, Fourier series.

Su Qtr. 5 cl. Prereq: 547 or permission of Graduate Advising Committee.

**651 Introduction to Real Analysis I U G 5**

Real numbers, infinite sequences, and series.

Au Qtr. 5 cl.

**652 Introduction to Real Analysis II U G 5**

Continuous functions, differentiable functions and functions of bounded variation; Riemann-Stieltjes integral.

Wi Qtr. 5 cl. Prereq: 651.

**653 Introduction to Real Analysis III U G 5**

Measurable sets and functions, elementary theory of the Lebesgue integral.

Sp Qtr. 5 cl. Prereq: 652.

**654 Complex Variables U G 3**

Complex arithmetic, geometry, conformal mapping, analytic functions, and residues.

Su Qtr. 3 cl. Prereq: Permission of dept. Recommended primarily for grad students in science and engineering. Not open to students with credit for 514 or 552.

**655 Elementary Topology I U G 4**

Continuity, compactness, connectedness in metric and general topological spaces, completeness in metric spaces.

Au Qtr. 4 cl. Prereq: Permission of dept.

**656 Elementary Topology II U G 4**

Continuation of 655; products, quotients, separation axioms, convergence, metrization and compactifications for general topological spaces.

Wi Qtr. 4 cl. Prereq: 655.

**657 Elementary Topology III U G 4**

Continuation of 656; fundamental group and covering spaces.

Sp Qtr. 4 cl. Prereq: 656.

**665 Modern Mathematical Methods in Relativity Theory I U G 4**

Geometry in Minkowski space-time; physical interpretations; tensors; exterior calculus; manifolds; Lie derivatives; parallel transport; torsion; curvature; Cartan's two structural equations; Einstein Field equations.

Wi Qtr. 4 cl. Prereq: 254 and Physics 133 or equiv with permission of dept.

**669 Introduction to Number Theory U G 5**

Basic concepts of divisibility, congruence, reciprocity, and primitive roots as introduction to algebra with emphasis on techniques of proof.

Su Qtr. 5 cl. Prereq: 254 or equiv.

**670 Algebra I U G 5**

Elementary theory of groups, permutation groups, Polya theory of counting, rings and ideals, polynomials.

Au Qtr. 5 cl. Prereq: Permission of dept.

**671 Algebra II U G 5**

Continuation of 670; vector spaces, linear transformations, canonical forms for matrices, linear programming, orthogonality.

Wi Qtr. 5 cl. Prereq: 670 or permission of dept.

**672 Algebra III U G 5**

Continuation of 671; quadratic forms, finite fields, various applications.

Sp Qtr. 5 cl. Prereq: 671 or permission of dept.

**674 Survey of Combinatorial Mathematics U G 4**

Enumeration, equivalence relations, generating functions, graph theory, optimization, and combinatorial designs.

Su Qtr. 3 cl. Prereq: 569 or equiv with permission of instructor.

**675† Applied Discrete Mathematics I U G 4**

Graph theory, trees, cycles, coboundaries, electrical networks, network flows, transportation problems, linear programming, integer programming, use of algorithms will be stressed.

Au Qtr. 4 cl. Prereq: 672 or equiv with written permission of dept.

**676† Applied Discrete Mathematics II U G 4**

Combinatorial designs, applications in experiments, coding theory, computational complexity, enumeration theory with physical applications.

Wi Qtr. 4 cl. Prereq: 675 or equiv with permission of dept.

**677† Applied Discrete Mathematics III U G 4**

Topics in graph theory, designs, codes, enumeration problems, algorithms and computational complexity.

Sp Qtr. 4 cl. Prereq: 676 or equiv with permission of dept.

**683 Topics in Number Theory and Algebra U G 4**

Joint creative problem activity through daily problem solving sets in number theory.

Su Qtr. 4 cl. Prereq: Permission of instructor.

**693 Individual Studies U G 1-5**

Individual conferences, assigned readings, and reports on minor investigations.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**701 Mathematical Methods in Science III U G 5**

Introduction to tensor analysis with applications to geometry; elements of the calculus of variations with applications to physical problems.

Sp Qtr. 3 1½-hr cl. Prereq: 601 or equiv or permission of dept.

**702† Integral Equations and Eigenvalue Problems I U G 3**

Orthogonal functions, linear integral equations of first and second kinds, relations to ordinary differential equations, Volterra's equation, boundary value problems, practical methods of solution.

Au Qtr. 3 cl. Prereq: 602.

**703† Integral Equations and Eigenvalue Problems II U G 3**

Distribution of eigenvalues, self-adjointness, definiteness, Green's functions, minimal properties, approximation of eigenvalues, eigenfunction expansions, Ritz method, iteration method, matrix eigenvalue problems, finite differences.

Wi Qtr. 3 cl. Prereq: 702.

**707 Numerical Methods in Scientific Computing I G 3**

Numerical solution of dynamical systems and evolution equations, linear and nonlinear systems, boundary value problems, bifurcation diagrams, form fit of data, interpolation, and approximation theory.

Au Qtr. 3 cl. Prereq: 556 and 572, or equiv; and working knowledge of Fortran, or written permission of instructor.

**708 Numerical Methods in Scientific Computing II G 3**

Continuation of 707; numerical quadrature, integral equations, iterative procedures, multi-grid techniques, computation of eigenvalues and eigenvectors, Hopf bifurcation, and optimization.

Wi Qtr. 3 cl. Prereq: 707.

**709 Numerical Methods in Scientific Computing III G 3**

Numerical solution of ordinary differential equations, consistency, stability and convergence, reaction-diffusion equations, phase diagrams, domains of attraction, strange attractors, and chaos.

Sp Qtr. 3 cl. Prereq: 708.

**712 Applied Functional Analysis I G 3**

Advanced linear algebra; introduction to normed and Hilbert spaces; projections and bounded operators; emphasis on matrix and function space applications.

Au Qtr. 3 cl. Prereq: 653 and 671, or 601 and 602, or permission of instructor. Not open to students with credit for 857, 858, or 859.

**713 Applied Functional Analysis II G 3**

Dual spaces, bilinear functionals, compact operators; Sobolev norms, applications to finite elements and integral equations.

Wi Qtr. 3 cl. Prereq: 712 or permission of instructor. Not open to students with credit for 857, 858, or 859.

**714 Applied Functional Analysis III G 3**

Spectral theory of linear operators, distribution theory, and applications.

Sp Qtr. 3 cl. Prereq: 713 or permission of instructor. Not open to students with credit for 857, 858, or 859.

**715 Differential Equations I U G 3**

Linear and non-linear systems of ordinary differential equations; phase plane analysis; stability, bifurcation, and chaos.

Au Qtr. 3 cl. Prereq: 255, 572, and 652; or permission of instructor. Not open to students with credit for 604.

**716 Differential Equations II U G 3**

Partial differential equations of mathematical physics, classification, characteristics; Sturm-Liouville theory, separation of variables.

Wi Qtr. Prereq: 514, 653, and 715; or permission of instructor. Not open to students with credit for 605.

**717 Differential Equations III U G 3**

Eigenfunction expansions, special functions, Green's functions, Fourier and Laplace transforms.

Sp Qtr. 3 cl. Prereq: 514 and 716, or permission of instructor.

**722 Theory of Probability I U G 4**

Measure and integration; random variables; convergence in probability, almost everywhere, in the mean; and weak convergence of measures.

Au Qtr. 4 cl. Prereq: 653. Not open to students with credit for Stat 722. Cross-listed in Statistics.

**723 Theory of Probability II U G 4**

Conditioning and sufficient statistics; laws of large numbers and central limit theorems; random walks; Laplace transforms and renewal processes.

Wi Qtr. 3 cl, 1 lab hr. Prereq: 722. Not open to students with credit for Stat 723. Cross-listed in Statistics.

**724 Theory of Probability III U G 4**

Continuation of 723.

Sp Qtr. 3 cl, 1 lab hr. Prereq: 723

**727 Scientific Computing Laboratory I G 1**

Designed to teach the computational tools required to write and use numerical codes to study physical systems.

Au Qtr. 1 2-hr cl. Prereq: A good working knowledge of FORTRAN (or another high-level language); concur: 707.

**728 Scientific Computing Laboratory II G 1**

Designed to teach the computational tools required to write and use numerical codes to study physical systems.

Wi Qtr. 1 2-hr cl. Prereq: 727; concur: 708.

**729 Scientific Computing Laboratory III G 1**

Designed to teach the computational tools required to write and use numerical codes to study physical systems.

Sp Qtr. 1 2-hr cl. Prereq: 728; concur: 709.

**735 Seminar in Teaching College Mathematics for International Graduate Students G 3**

Preparation of international graduate students for the teaching of college level mathematics courses.

Su (2nd Term) Qtr. 3 2-hr cl. Prereq: Permission of Graduate Advising Committee. This course is graded S/U.

**736 Seminar in Teaching College Mathematics for Domestic Graduate Students G 3**

Preparation for teaching lower-division mathematics courses.

Su (2nd Term) Qtr. 3 2-hr cl. Prereq: Permission of Graduate Advising Committee. This course is graded S/U.

**745 Advanced Mathematical Logic I U G 3**

Basic proof theory and model theory; completeness, interpolation and definability theorems, elimination of quantifiers, compactness, Lowenheim-Skolem Theorems, elementary extensions, and categoricity.

Au Qtr. 3 cl. Prereq: 649 or permission of instructor.

**746 Advanced Mathematical Logic II U G 3**

Incompleteness and undecidability; basic recursion theory; Turing machines, Church's thesis, recursive and recursively enumerable sets, Turing degrees, and the arithmetical hierarchy.

Wi Qtr. 3 cl. Prereq: 745 or permission of instructor.

**747 Advanced Mathematical Logic III U G 3**

Basic axiomatic set theory; Zermelo-Frankel set theory, the cumulative hierarchy, ordinals and cardinals, constructibility, and forcing.

Sp Qtr. 3 cl. Prereq: 746 or permission of instructor.

**750 Real Analysis I U G 5**

Relative extremes in partial orders; additive and countable additive set functions; extensions of set functions; integration, differentiation, applications.

Au Qtr. 5 cl. Prereq: 653.

**751 Real Analysis II U G 5**

Continuation of 750.

Wi Qtr. 5 cl. Prereq: 750.

**752 Real Analysis III U G 5**

Continuation of 751.

Sp Qtr. 5 cl. Prereq: 751.

**753 Introduction to Complex Analysis I U G 5**

Families of holomorphic and meromorphic functions, geometrical methods of the theory of functions, conformal transformations; including the Cauchy integral theorem, Runge's theorem, Riemann mapping theorem.

Au Qtr. 5 cl. Prereq: 653.

**754 Introduction to Complex Analysis II U G 5**

Analytic continuation, general analytic functions, algebraic, entire, elliptic, the gamma and zeta function, Dirichlet's series, Picard's theorems, Mittag-Leffler's theorem, Stirling's formula.

Wi Qtr. 5 cl. Prereq: 753.

**767\* Introduction to the Theory of Approximation I U G 4**

Approximation by polynomials and trigonometric polynomials, Chebeshev's theory of best approximation and its generalizations; interpolation processes and mechanical quadrature; orthogonal polynomials and elements of harmonic analysis.

Au Qtr. 4 cl. Prereq: 653 or equiv with permission of dept.

**768\* Introduction to the Theory of Approximation II U G 4**

A continuation of 767.

Wi Qtr. 4 cl. Prereq: 767 or equiv with permission of dept.

**770 Abstract Algebra I U G 5**

Permutation groups, solvable groups, composition series, polynomial rings, unique factorization domains, canonical forms, bilinear forms, free modules, tensor products, Galois theory, algebraic closure, transcendental extensions.

Au Qtr. 5 cl. Prereq: 672 or equiv with permission of instructor.

**771 Abstract Algebra II U G 5**

A continuation of 770.

Wi Qtr. 5 cl. Prereq: 770 or equiv with permission of dept.

**772 Abstract Algebra III U G 5**

A continuation of 771.

Sp Qtr. 5 cl. Prereq: 771 or equiv with permission of dept.

**775 Combinatorics and Graph Theory I U G 5**

Transversal theory, network flows, matroids, linear programming, Ramsey theory.

Au Qtr. Prereq: 672.

**776 Combinatorics and Graph Theory II U G 5**

Combinatorial designs and geometries, difference sets, orthogonal Latin squares, coding theory, enumeration theory including Möbius inversion, Polya theory, and generating functions.

Wi Qtr. Prereq: 775.

**777 Combinatorics and Graph Theory III U G 5**

Planar graphs and embeddings in surfaces, graph connectivity, algebraic graph theory.

Sp Qtr. Prereq: 776.

**780 Number Theory I U G 3**

Algebraic number theory.

Au Qtr. 3 cl. Prereq: 772.

**781 Number Theory II U G 3**

Diophantine equations.

Wi Qtr. 3 cl. Prereq: 780.

**782 Number Theory III U G 3**

Analytic number theory.

Sp Qtr. 3 cl. Prereq: 781.

**H783 Honors Research U 3-5**

A program of reading and research for each student with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a cumulative pt-hr ratio of 3.50 in math; permission of instructor under whose supervision the work is to be completed and of the ASC Honors Committee. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**787 Graduate Problem Seminars U G 3**

Topics helpful in problem solving in fundamental areas of mathematics practice with problems in a specific area of mathematics.

Su Qtr. 3 cl. Prereq: Permission of Graduate Advising Committee. Each decimal subdivision repeatable to a maximum of 9 cr hrs.

**787.01 Problems in Abstract Algebra****787.02† Problems in Complex Analysis****787.03 Problems in Real Analysis****787.04† Problems in Topology****804 Applied Complex Variables and Asymptotics I G 3**

Methods of complex variables.

Au Qtr. 3 cl. Prereq: 653, 654, and 717; or permission of instructor.

**805 Applied Complex Variables and Asymptotics II G 3**

Asymptotic methods and their application to ordinary differential equations.

Wi Qtr. 3 cl. Prereq: 804.

**806 Applied Complex Variables and Asymptotics III G 3**

Asymptotic and complex variable methods applied to linear and nonlinear partial differential equations.

Sp Qtr. 3 cl. Prereq: 805.

**807 Numerical Solution of Partial Differential Equations I G 3**

Finite difference methods for parabolic and hyperbolic partial differential equations.

Au Qtr. 3 cl. Prereq: 602 or 717, 709, and Fortran experience; or permission of instructor.

**808 Numerical Solution of Partial Differential Equations II G 3**

Continuation of 807.

Wi Qtr. 3 cl. Prereq: 807.

**809 Numerical Solution of Partial Differential Equations III G 3**

Special topics in the numerical solution of partial differential equations.

Sp Qtr. 3 cl. Prereq: 808.

**820†\* Ordinary Differential Equations I G 3**

Modern theory of ordinary differential equations; stability, asymptotic analysis, Lyapunov exponents, stable manifolds, perturbation methods, and bifurcation theory.

Au Qtr. 3 cl. Prereq: 715 or permission of instructor. Not open to students with credit for 760.

**821†\* Ordinary Differential Equations II G 3**

Continuation of 820; differential equations on manifolds, structural stability, integrable and nonintegrable systems; chaos and strange attractors; applications.

Wi Qtr. 3 cl. Prereq: 820. Not open to students with credit for 761.

**822†\* Ordinary Differential Equations III G 3**

Continuation of 821.

Sp Qtr. 3 cl. Prereq: 761 or 821 or permission of instructor.

**835\* Partial Differential Equations I G 3**

First order PDE's, theory of characteristics, second order PDE's, classifications, standard methods of solution; nonlinear equations.

Wi Qtr. 3 cl. Prereq: 717 or permission of instructor. Not open to students with credit for 763.

**836\* Partial Differential Equations II G 3**

Continuation of 835.

Sp Qtr. 3 cl. Prereq: 835 or permission of instructor. Not open to students with credit for 764.

**837\* Partial Differential Equations III G 3**

Continuation of 836.

3 cl. Prereq: 836 or permission of instructor.

**840 Algebraic Geometry I G 3**

Varieties over algebraically closed fields.

Au Qtr. 2 72-min cl. Prereq: 772.

**841 Algebraic Geometry II G 3**

Schemes, sheaves, and cohomology.

Wi Qtr. 2 72-min cl. Prereq: 840.

**842 Algebraic Geometry III G 3**

Curves and surfaces.

Sp Qtr. 2 72-min cl. Prereq: 841.

**846 Topics in Discrete Mathematics G 2-5**

Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**851+ Differential Geometry I G 3**

Curves, surfaces, fundamental forms, tensors, and connections.

Wi Qtr. 3 cl. Prereq: 655, 751, and 771.

**852+ Differential Geometry II G 3**

Continuation of 851.

Sp Qtr. 3 cl. Prereq: 851.

**854+ Lie Groups I G 3**

Integration on manifolds, Lie groups, classical groups, homogeneous spaces.

Wi Qtr. 3 cl. Prereq: 651, 751, and 771.

**855+ Lie Groups II G 3**

Continuation of 854.

Sp Qtr. 3 cl. Prereq: 854.

**857+ Introduction to Functional Analysis I G 3**

Linear topological spaces, normed spaces, Hilbert spaces, convex sets, integration of vector-valued functions.

Au Qtr. 3 cl. Prereq: 552 and 751.

**858+ Introduction to Functional Analysis II G 3**

Continuation of 857.

Wi Qtr. 3 cl. Prereq: 857.

**859+ Introduction to Functional Analysis III G 3**

Banach Algebras, spectral theory, harmonic analysis, fixed-point theorems; applications to analysis.

Sp Qtr. 3 cl. Prereq: 857 and 858.

**860 Algebraic Topology I G 3**

Singular homology theory.

Au Qtr. 3 cl. Prereq: 657.

**861 Algebraic Topology II G 3**

Continuation of 860; general cohomology theories.

Wi Qtr. 3 cl. Prereq: 860.

**862 Algebraic Topology III G 3**

Continuation of 860 and 861; fibrations and homotopy theory.

Sp Qtr. 3 cl. Prereq: 861.

**863\* Potential Theory I G 3**

Newtonian potentials, boundary value problems; logarithmic potential, elliptic partial differential equations.

Sp Qtr. Prereq: 552 and permission of dept.

**865 Topics in Applied Mathematics G 2-5**

Su, Au Qtrs. 2-5 cl. Prereq: Written permission of dept. Repeatable to a maximum of 20 cr hrs.

**869 Mathematical Theory of Communication and Control G 2-5**

Sp Qtr. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**870 Topics in Graph Theory G 2-5**

Topics of current research interest.

Au, Wi, Sp Qtrs. Prereq: 777 and permission of dept. Repeatable to a maximum of 15 cr hrs.

**872+ Group Theory I G 4**

Properties of groups, extensions, transfer, generators and defining relations, representation theory, permutation groups.

Au Qtr. 4 cl. Prereq: 672 or 772.

**873+ Group Theory II G 4**

Continuation of 872.

Wi Qtr. 4 cl. Prereq: 872.

**874+ Group Theory III G 4**

Continuation of 873.

Sp Qtr. 4 cl. Prereq: 873.

**875 Combinatorics Seminar G 2-5**

Recent research articles in combinatorics are read and presented by the students.

Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs.

**880+ Nonlinear Waves I G 3**

Fundamental theory of linear and nonlinear waves; recent developments in the theory of nonlinear waves.

Au Qtr. 3 cl. Prereq: 715 or permission of instructor.

**881+ Nonlinear Waves II G 3**

Continuation of 880.

Wi Qtr. 3 cl. Prereq: 880 or permission of instructor.

**882+ Nonlinear Waves III G 3**

Continuation of 881.

Sp Qtr. 3 cl. Prereq: Prereq: 881 or permission of instructor.

**893 Individual Studies G 1-5**

Individual assigned readings and reports on research investigations.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-5**

When need is sufficient, the department will offer under this number a course on some phase of mathematics not covered in its regular offerings.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 30 cr hrs.

**931 Ergodic Theory I G 3**

Measurable transformations, mixing and ergodicity, existence of invariant measures, contraction operations on function spaces, ergodic theorems.

Au Qtr. 3 cl. Prereq: 751.

**932 Ergodic Theory II G 3**

Continuation of 931.

Wi Qtr. 3 cl. Prereq: 931.

**939 Topics in Probability Theory G 2-5**

Various advanced topics in probability theory.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**949 Topics in Logic G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**950 Topics in Real Analysis G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**951 Topics in Complex Analysis G 2-5**

Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: 754. Repeatable to a maximum of 20 cr hrs.

**953 Topics in Topology G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**957 Topics in Differential Geometry G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**961 Topics in Functional Analysis G 2-5**

Topics to be chosen from current research papers.

Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**970 Topics in Representation Theory G 2-5**

Topics in the representation theory of various algebraic structures.

Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**974 Topics in Homological Algebra G 2-5**

Topics selected from current research articles.

Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: 973 or permission of dept. Repeatable to a maximum of 20 cr hrs.

**975 Topics in Geometry G 2-5**

Topics to be chosen from current research papers.

Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**978 Topics in Ring Theory G 2-5**

Topics selected from current research papers.

Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: 772. Repeatable to a maximum of 20 cr hrs.

**981 Topics in the Theory of Groups G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**982 Topics in Algebra G 2-5**

Topics selected from current research papers.

Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**983 Topics in Number Theory G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

**984 Seminar on Actuarial Science G 2-5**

Current topics in actuarial science.

Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**985 Seminar in Group Theory G 2-5**

Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**986 Seminar on Algebra G 2-5**

Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**988 Seminar on Number Theory G 2-5**

Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**990 Seminar on Geometry G 2-5**

Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**991 Seminar in Probability Theory G 2-5**

Topics selected from current research papers.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**992 Seminar in Applied Mathematics G 2-5**

Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs, including cr hrs earned in 998. This course is graded S/U.

**995 Seminar in Ergodic Theory G 2-5**

Topics selected from current research papers.

Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**996 Seminar in Analysis G 2-5**

Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**997 Seminar in Topology G 2-5**

Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**294 Group Studies in Mechanical Engineering U 1-6**

Special topics in mechanical engineering; the particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

**481 System Dynamics and Vibrations U 3**

Modeling of mechanical and electrical systems; first and second order systems; and analytical, computer, and experimental solution methods. Singh.

Au, Wi Qtrs. 2 cl, 1 2-hr lab. Prereq: 250 and Elec Eng 300.

**482 System Dynamics and Electromechanics U 4**

Dynamics of general linear systems, thermofluid system dynamics, and electromechanics with emphasis on applications in mechanical engineering. Srinivasan.

Au, Sp Qtrs. 2 1½-hr cl, 1 2-hr lab. Prereq: 481 and 503; and prereq or concur: 504.

**489 Professional Practice in Industry U 2**

Actual employment in a co-op program job in industry and the preparation of a comprehensive report based on a pre-assigned outline. Waldron.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to Co-op program in mech eng. Repeatable to a maximum of 8 cr hrs. This course is graded S/U, and may only be counted as a free elective.

**500 Engineering Thermal Sciences U G 4**

Introduction to thermodynamics, fluid mechanics, and heat transfer with engineering applications. Drake.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Math 415, and Physics 133 or permission of dept. Open to eng majors only. Not open to students majoring in mech eng.

**501 Thermodynamics I U G 4**

A study of basic engineering thermodynamics. Moran.

Au, Sp Qtrs. 2 2-hr cl. Prereq: Enrollment as mech eng major or written permission of mech eng dept.

**502 Thermodynamics II U G 3**

Continuation of 501. Moran.

Au, Wi Qtrs. 2 1½-hr cl. Prereq: 250 and 501.

**503 Fluid Dynamics I U G 3**

A study of the basic concepts, fundamental equations, and applications of fluid mechanics to engineering problems. Guezennec.

Au, Wi Qtrs. 2 1½-hr cl. Prereq: 250 and 501.

**504 Fluid Dynamics II U G 4**

Continuation of 503. Korpela.

Wi, Sp Qtrs. 2 1½-hr cl, 1 2-hr lab. Prereq: 502 and 503.

**510 Heat Transfer U G 4**

A study of the fundamentals of conduction, convection, and thermal radiation energy transfer with engineering applications. Vafai.

Au, Sp Qtrs. 2 1½-hr cl, 1 2-hr lab. Prereq: 504; agri eng majors only: 501, Agri Eng 431, and Civil En 413.

**553 Kinematics and Dynamics of Machinery U G 4**

Motion and force analysis in mechanisms such as plane linkages and cams; introduction to the synthesis of plane linkages and simple cam systems. Berme.

Wi, Sp Qtrs. 2 2-hr cl. Prereq or concur: 560 or MSE 405 or permission of mech eng dept.

**561 Failure Modes, Stress Analysis, and Failure Prevention Principles U G 5**

A study of the application of the general principles and empiricisms of mechanics of solids to the creative design of mechanical equipment. Hamrock.

Wi, Sp Qtrs. 2 2-hr cl, 1 2-hr lab. Prereq: 250 and MSE 405; for non-mech eng majors: Eng Mech 220 and MSE 405 or equiv.

**562 Design of Selected Machine Elements I U G 3**

Continuation of 561. Hamrock.

Au, Sp Qtrs. 2 1½-hr cl. Prereq: 561.

**563 Design of Selected Machine Elements II U G 3**

Continuation of 561. Hamrock.

Au, Wi Qtrs. 2 1½-hr cl. Prereq: 562.

**564 Senior Design Group Project U G 3**

The methodology of intermediate design and practice in the design of a specific system which may utilize principles of any mechanical engineering discipline. Moran and Waldron.

Au, Wi, Sp Qtrs. 3 2-hr lab. Prereq: 510; prereq or concur: 563. Offered in cooperation with Nuclear Engineering.

## Mechanical Engineering

2075 Robinson Laboratory, 206 West 18th Avenue, 292-2289

**250 Numerical Methods in Mechanical Engineering U 4**

Computing methods for nonlinear equations, interpolation, ordinary differential equations, and statistics applied to engineering problems. Nakamura.

Au, Sp Qtrs. 2 2-hr cl. Prereq: Enrollment as mech eng major or written permission of mech eng dept.

**570 Mechanical Engineering Measurements U G 3**

A theoretical and experimental study of the principles of operation and performance characteristics of measuring instruments used in mechanical engineering. Houser.

Au, Wi Qtrs. 1 cl, 1 4-hr lab. Prereq: 482; prereq or concur: 510.

**571 Principles of Automatic Control U G 4**

A theoretical and experimental study of the principles of operation of feedback control systems, including servomechanisms and process control. Menq.

Wi, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: 570 or permission of instructor.

**580 Special Topics in Vehicle Development U 2**

Topics of special interest in vehicle development. Studies include analysis, design, fabrication and testing of vehicles. Topics are announced in quarter prior to quarter offered. Kennedy.

Su, Au, Wi, Sp. Prereq: Jr standing in engineering or written permission of instructor. Repeatable to a maximum of 8 cr hrs in any or a combination of decimal subdivisions. Up to 4 cr hrs applicable as BSME technical electives.

**580.01 High Performance Vehicle Development****580.02 All Terrain Vehicle Development****580.03 Flight Vehicle Development****580.04 Analysis, Design, Fabrication and Testing of Non-Conventional Vehicles****581 Mechanical Engineering Laboratory U G 3**

The study and application of methods of experimental analysis. Guezennec and Houser.

Au, Wi, Sp Qtrs. 2 2-hr lab and 5 hrs lab planning and report writing. Prereq: 510 and 570; prereq or concur: 563. Offered in cooperation with Nuclear Engineering.

**593 Individual Studies in Mechanical Engineering U G 1-5**

Provides the opportunity to pursue special studies in mechanical engineering not otherwise covered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**601 Gas Dynamics U G 3**

An analytical study of one and two dimensional steady flow and one dimensional unsteady flow. Samimy.

Wi Qtr. 3 cl. Prereq: 504 and Math 415 or equiv or written permission of course supervisor. Not open to students with credit for 801.

**612 Principles of Heat Exchangers U G 3**

A study of principles of heat and mass transfer as applied to the design of heat exchangers. Christensen.

Au Qtr. 3 cl. Prereq: 510.

**625+ Central-station Fossil Power Generation U G 3**

An analytical and descriptive study of the vapor power cycles and associated energy transport processes used in the generation of electrical power from fossil fuels. Essenhigh.

Sp Qtr. 2 1½-hr cl, 1 2-hr lab. Prereq: 502 and 510 or permission of instructor.

**627 Design of Turbomachinery U G 3**

An introduction to the design and principles of power-producing, absorbing, and transmitting turbomachinery. Subramaniam.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 503 and 504. Not open to students with credit for 527.

**630 Energy Conversion in Internal Combustion Engines U G 3**

A study of combustion chambers, valve mechanisms, and the dynamic balance of internal combustion engines. Kennedy.

Au Qtr. 3 cl. Prereq: 502 or permission of instructor.

**631 Mechanical Analysis of Internal Combustion Engines U G 3**

Force analysis as related to the design of engine components such as pistons, bearings, valve springs, and crankshafts. Kennedy.

Wi Qtr. 3 cl. Prereq: 562, 563 or permission of instructor.

**634 Gas Turbine Power Plants U G 3**

A study of the principles, performance, and design of gas turbine power plants. Samimy.

Sp Qtr. 3 cl. Prereq: 504 and 510.

**636 Nuclear Power Plants U G 3**

A study of thermal and mechanical design aspects and economics of nuclear power plants and processes. Christensen.

Wi Qtr. 3 cl. Prereq: Nuclr En 505 and 501 or 500 with permission of instructor. Not open to students with credit for Nuclr En 636. Cross-listed in Nuclear Engineering.

**637 Heat Transfer Application in Nuclear Reactor Systems U G 3**

The heat transfer applications in nuclear reactor systems include but are not limited to: heat transfer in PWR and BWR fuel rods, coolant, and reactor internals. Christensen.

Sp Qtr. 3 cl. Prereq: 636 or Nuclr En 636 and Mech Eng 510 or 500 with permission of instructor. Not open to students with credit for Nuclr En 637. Cross-listed in Nuclear Engineering.

**640 Principles of Environmental Control U G 4**

A study of the basic principles for evaluating, specifying, and controlling building environments for human health and comfort. Drake.

Au Qtr. 4 cl. Prereq: 502, prereq or concur: 504 and 510; or permission of instructor.

**641 Heating, Ventilating, and Air Conditioning U G 4**

A study of design techniques, practices, components, and systems for typical environmental control applications such as human comfort. Drake.

Wi Qtr. 4 cl. Prereq: 640 or permission of instructor.

**650 Machinery Dynamics and Vibrations U G 4**

Machinery dynamics, shock and vibration control topics including balancing, rotor dynamics, isolators, damping, impacts, absorbers, frequency analysis, and modal analysis experiments. Houser.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 482, 553, and prereq or concur: 570; or permission of instructor.

**654 Land Vehicle Dynamics U G 3**

Study of the principles and design methodology of automotive vehicles; design and analysis of suspension and braking systems. Guenther.

Sp Qtr. 3 cl. Prereq: 482 and 562, or permission of instructor.

**661 Optimization in Mechanical Design U G 3**

Application of analytical optimization methods to the solution of deterministic and probabilistic mechanical design problems; introduction to interactive optimization using RCGI computer graphics facilities. Kinzel.

Sp Qtr. 3 cl. Prereq: 562 or 563 or permission of instructor.

**662 Introduction to Mechanics of Composite Structures U G 4**

An introduction to the macromechanical analysis of anisotropic composite structures including governing constituent equations, strength and stiffness advantages and failure envelopes. Busby.

Au, Sp Qtrs. 2 2-hr cl. Prereq: Eng Mech 220 or equiv or permission of instructor. Not open to students with credit for Civil En 662 or Eng Mech 662. Cross-listed in Civil Engineering and Engineering Mechanics.

**664 Mechanical Engineering Computer-Aided Design I U G 4**

Methodology and practice in computer-aided design of components and systems utilizing principles of several mechanical engineering disciplines. Busby.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 510 and 561; Math 415; and En Graph 167 or written permission of course supervisor.

**666 Acoustic Problems in Engineering U G 3**

A study of the fundamentals of acoustics and noise control including design criteria based on hearing damage and other human responses to sound. Singh.

Wi Qtr. 3 cl. Prereq: 3rd yr standing in science or ENG and written permission of instructor.

**671 Measurement System Application and Design U G 4**

A theoretical and experimental study of measurement instrumentation; emphasis on both principles of operation and analysis and design techniques for measurement systems of a mechanical and electromechanical nature. Houser.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 570 or permission of instructor.

**672 Control Systems Design U G 4**

A study of the theoretical and experimental procedures involved in the design of feedback control systems including servomechanisms and process control. Srinivasan.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 571 or permission of instructor.

**673 Applied Digital Control U G 4**

Theory and application of digital control system design techniques to the control of physical systems; lab sessions deal with micro-processor implementation of controllers. Srinivasan.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 571 or equiv.

**675 Design of Fluid Power Systems U G 3**

Study of the principles and design methodology of fluid power transmission and control components and systems; emphasis on dynamic analysis with laboratory and computer simulation demonstrations. Singh.

Au Qtr. 3 cl. Prereq: 382 and 504; prereq or concur: 562, or permission of instructor.

**H680 Digital Data Acquisition and Signal Processing U G 3**

Methodology and practice of computer-aided experimentation and signal processing techniques; frequency analysis, diagnostics, system identification, and random data processing. Singh.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq or concur: 481, jr standing in dept or equiv, 3.40 cumulative pt-hr ratio, and permission of dept. Not available for audit. Open to Honors and combined BS/MS students only.

**H681 Undergraduate Honors Program Research U G 1-3**

Honors students are offered the opportunity to pursue independent project research; presentations and thesis writing included. Singh.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in dept or equiv, 3.40 cumulative pt-hr ratio, and permission of dept. Not available for audit. Repeatable to a maximum of 6 cr hrs. Open to Honors and combined BS/MS students only.

**682 Computer-Aided Design and Manufacturing U G 3**

Principles of CAD/CAM and design for automatic manufacturing and assembly; integration of design and manufacturing; simulation of manufacturing processes. Kinzel.

Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: Enrollment in manufacturing systems and engineering program and prereq or concur: 563, or permission of instructor. Not open to students with credit for 582.

**683 Rapid Design Prototyping Laboratory U G 2**

Rapid design prototyping using engineering workstations, CAD/CAM software, and table-top CNC milling machines, lathes, and injection-molding machine. Ishii.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 682 or permission of instructor. Not open to students with credit for 582. Limited to 20 students.

**687 Introduction to Design in Biomedical Engineering U G 3**

Introduction of engineering students to design problems in bio-medical engineering; analysis in bio-mechanics, bio-fluid mechanics, diffusion, and elementary physiology. Berme.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**693 Individual Studies in Mechanical Engineering U G 2-10**

Designed to give the advanced student opportunity to pursue special studies not otherwise offered; work undertaken will be selected from automotive and internal combustion machinery, combustion and fuels, heat transfer, heating, ventilating, air conditioning, industrial hydraulics, machine design, refrigeration, steam power plants, and thermodynamics.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs with a maximum of 10 cr hrs in any one topic. This course is graded S/U.

**694 Group Studies in Mechanical Engineering U G 1-6**

Special topics in mechanical engineering. The particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Waldron.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Transport Processes U G 3**

A parallel, systematic study of the three transport processes of mass, momentum, and energy from the continuum viewpoint. Moran.

Su Qtr. 3 cl. Prereq: 510 and Math 415 or written permission of course supervisor.

**705 Fundamental Concepts in Fluid Mechanics G 3**

In-depth derivation of equations and principles governing fluid flow with an emphasis on formulation of problems.

Au Qtr. 2 1 1/2-hr cl. Prereq: Grad standing in Mech Eng or permission of instructor.

**707 Numerical Methods in Particle Diffusion, Heat Transfer, and Radiation Transport U G 3**

Computer solution of neutron diffusion, heat conduction, and radiation transport based on finite difference methods using marching, iterative, and direct-solution schemes. Nakamura.

Au Qtr. 2 1 1/2-hr cl. Prereq: 510 or Math 512 or Nuclr En 660, Cptr/Inf 541, and En Graph 167. Not open to students with credit for Nuclr En 707 or 767. Cross-listed in Nuclear Engineering.

**710 Fundamental Concepts in Heat and Mass Transfer G 3**

In-depth derivation of equations and principles governing heat and mass transfer with an emphasis on formulation of problems.

Au Qtr. 2 1 1/2-hr cl. Prereq: Grad standing in mech eng or permission of instructor.

**726 Introduction to Combustion U G 3**

Introduction to thermodynamics and kinetics of combustion and to the role of diffusion in combustion systems; applications to evaporation of fuel droplets, catalytic conversion, and coal combustion. Essenhigh.

Wi Qtr. 2 1 1/2-hr cl. Prereq: 504; prereq or concur: 510.

**739 Knowledge-Based Systems in Engineering U G 3**

Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation.

Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: Cptr/Inf 630 or permission of instructor. Cross-listed in Computer and Information Science, Chemical, Civil, and Nuclear Engineering.

**751+ Application of Computer Graphics to Kinematic Synthesis and Analysis U G 4**

Application of interactive computer graphics to the kinematic synthesis of linkages; extensive use of the RCGL computer graphics facility. Kinzel.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 553 and En Graph 167 or equiv. Not open to students with credit for 651.

**752 Mechanical Design of Manipulators and Robots U G 3**

Principles of hardware and software design of industrial robots and related devices; includes use of actual industrial robot programming procedures. Waldron.

Au Qtr. 2 1 1/2-hr cl. Prereq: Eng Mech 430 and Math 568, or permission of instructor.

**762 Structural Composites U G 3**

An introduction to the analysis and design synthesis of beams, columns, rods, plates, and panels made of structural composites. Busby.

Wi Qtr. 3 cl. Prereq: 662, or Civil En 662 or Eng Mech 662 or permission of instructor. Not open to students with credit for Civil En 762 or Eng Mech 762. Cross-listed in Civil Engineering and Engineering Mechanics.

**765 Principles of Tribology U G 3**

Mechanisms of friction, wear, and lubrication that govern interfacial behavior; applications of basic theories to solutions of friction and wear problems. Bhushan.

Au Qtr. 2 1 1/2-hr cl. Prereq: 560 or permission of instructor.

**766 Engineering Acoustics U G 3**

A course in engineering acoustics covering the phenomenon by which acoustic energy is generated and transmitted, with applications to mechanical machinery. Singh.

Sp Qtr. 3 cl. Prereq: 666 or permission of instructor.

**767 Fluid Film Lubrication U G 3**

Hydrodynamic lubrication applied to journal and thrust bearings; elastohydrodynamic lubrication applied to rolling-element bearings and gears. Hamrock.

Wi Qtr. 2 1 1/2-hr cl. Prereq: 561 or permission of instructor.

**771 Design Of Fiber Optic Systems U G 4**

Introduction to mechanical and systems aspects of fiber optics including wave guiding of light, system components, optical fiber sensors, and design for industrial applications.

Sp Qtr. 2 1 1/2-hr cl, 1 2-hr lab. Prereq: 570 or permission of instructor.

**802\* Fundamentals of Thermodynamics I G 3**

A study of the fundamentals of thermodynamics from the classical viewpoint with emphasis on the use of the first and second laws for the analysis of thermal systems. Moran.

Au Qtr. 2 1 1/2-hr cl. Prereq: 502 and Math 415 or written permission of course supervisor.

**803+\* Fundamentals of Thermodynamics II G 3**

Introduction to the fundamentals of thermodynamics from the microscopic viewpoint. Rich.

Au Qtr. 2 1 1/2-hr cl. Prereq: 802.

**806+\* Viscous Flow of Fluids G 3**

Theory of viscous fluids; exact solutions of the Navier Stokes equations, creeping flows, and boundary layers. Vafai.

Wi Qtr. 2 1 1/2-hr cl. Prereq: 504.

**807+\* Conduction Heat Transfer G 3**

A study of the general heat transfer equations and their application to heat transfer in solids. Korpela.

Sp Qtr. 2 1 1/2-hr cl. Prereq: 510.

**808+\* Laminar Convection Heat Transfer G 3**

Laminar forced convection in pipes; laminar thermal boundary layers and entrance effects; stagnation point heat transfer; free convection boundary layers and plumes. Korpela.

Wi Qtr. 2 1 1/2-hr cl. Prereq: 806 and 807.



**809\*\* Thermal Radiation Heat Transfer G 3**

Black body radiation, gray body approximation, radiation surface properties, radiation exchange in non-participating media, conduction-radiation interaction, convection-radiation interaction, and introduction to radiation in participating media. Vafai.

Au Qtr. 2 1½-hr cl. Prereq: 807.

**810\*\* Inviscid Flows G 3**

Kinematics of inviscid flows; circulation and vorticity; two-dimensional potential flows; complex potential and complex velocity; introduction to free streamline theory and three-dimensional potential flows. Conlisk.

Sp Qtr. 2 1½-hr cl. Prereq: 504.

**811 Computational Fluid Dynamics G 4**

Advanced numerical methods for solving Navier-Stokes equations as well as equations for inviscid and boundary layer flows. Nakamura.

Sp Qtr. 2 2-hr cl. Prereq: 707 or Aero Eng 615. Not open to students with credit for Aero Eng 870. Cross-listed with Aeronautical and Astronautical Engineering 870.

**813\*\* Turbulent Flow and Heat Transfer G 3**

Study of turbulent flows, with emphasis on the calculation of heat transfer in turbulent internal and external flows. Guezennec.

Sp Qtr. 3 cl. Prereq: 806 and 807.

**814\*\* Optical Techniques in Reacting and Nonreacting Flows G 3**

Measurements and visualizations based on elastic and inelastic scattering and laser-induced fluorescence and background materials on optics, quantum mechanics, lasers, and detectors. Saminy.

Wi Qtr. 2 1½-hr cl. Prereq: Grad standing in engineering/ science.

**815\*\* Multiphase Flow, Heat, and Mass Transfer in Porous Media G 3**

Current theories on flow, heat, and mass transfer in porous media and an understanding of the mechanisms involved in multiphase transport in porous media. Vafai.

Sp Qtr. 2 1½-hr cl. Prereq: 806 or permission of instructor.

**818\*\* Advanced Analytical Methods in Mechanical Engineering G 3**

Transform and Green's function methods for solution of problems arising in heat conduction, vibration of continuous bodies, and mechanics of fluids; asymptotic evaluation of integral representations of these solutions. Korpela.

Au Qtr. 2 1½-hr cl. Prereq: 807 or 850 or equiv. Not open to students with credit for 881.

**826\*\* Combustion G 3**

A study of chemical thermodynamics and kinetics, the basic equations of change, and application of fundamentals to combustion in engineering systems. Essenhigh.

Sp Qtr. 2 1½-hr cl. Prereq: 726 or permission of instructor.

**837\*\* Advanced Topics in Tribology G 3**

Current and advanced research topics in friction, wear, and lubrication vital to the successful operation of machine elements. Bhushan.

Sp Qtr. 2 1½-hr cl. Prereq: 765 and 767 or permission of instructor.

**850\* Dynamics of High Speed Machinery G 3**

An advanced study of the interrelationships among forces, motions, and masses as related to rigid or elastic machine members. Singh.

Wi Qtr(odd years). 2 1½-hr cl. Prereq: 650 and 880; or equiv.

**851\* Kinematic Geometry of Mechanisms G 3**

Kinematics and statics of spatial mechanisms including robotic mechanisms. Waldron.

Sp Qtr. 2 1½-hr cl. Prereq: 752 or permission of instructor.

**860\* Advanced Mechanical Design G 3**

A study of concepts, principles, and phenomenological theories related to the failure-prevention aspect of mechanical design. Busby.

Au Qtr(even years). 2 1½-hr cl. Prereq: 561 and Math 415.

**861\*\* Stress Analysis of Machinery G 3**

A study of concepts, principles, and procedures related to the analysis of stresses and strains in machine parts. Kinzel.

Au Qtr(odd years). 2 1½-hr cl. Prereq: 562, 563, and 664 or Eng Mech 763 or equiv.

**862 Advanced Mechanics of Structural Composites G 3**

An introduction to current important topic areas in structural composites; among these topics are fracture mechanisms and models, energy method modeling, dynamic structural response, and numerical modeling schemes. Busby.

Sp Qtr. 2 1½ cl. Prereq: 762 or Civil En 762 or Eng Mech 762 or permission of instructor. Not open to students with credit for Civil En 862 or Eng Mech 862. Cross-listed in Civil Engineering and Engineering Mechanics.

**866\*\* Hydrodynamic Stability of Fluid Motions G 4**

Instability of inviscid and viscous parallel flows; thermal and centrifugal instability boundary-layer transition; and concepts of linear, nonlinear, and secondary instability analysis. Herbert.

Sp Qtr. 2 1½-hr cl. Prereq: Aero Eng 570 or 800 equiv, or permission of instructor. Not open to students with credit for Aero Eng 866. Cross-listed in Aeronautical and Astronautical Engineering.

**870\* Digital Signal Analysis of Mechanical Systems G 3**

Conceptual, measurement, and numerical aspects of digital data acquisition and signal processing, random data analysis, and system identification and diagnostic techniques used for mechanical systems. Singh.

Au Qtr(even years). 2 1½-hr cl. Prereq: 880 or permission of instructor.

**873 State Space Methods for Dynamic Systems Analysis and Control G 3**

Application of state-space methods to the analysis and synthesis of dynamic systems with emphasis on control applications. Srinivasan.

Wi Qtr. 2 1½ cl. Prereq: Math 568 or equiv and Mech Eng 571 or equiv, or permission of instructor. Not open to students with credit for Elec Eng 750.

**880 Lumped Parameter System Analysis G 3**

Lumped parameter system analysis of mechanical, thermal, hydraulic, pneumatic, and electromechanical systems; system response to periodic, transient, and random excitation; computer and physical system demonstrations. Srinivasan.

Au Qtr. 3 cl. Prereq: Math 415 or permission of instructor.

**882\* Modeling of Dynamic Systems G 4**

A study of theoretical, experimental, and computer methods for characterizing the dynamic behavior of complex systems. Hastings.

Sp Qtr. 2 1½-hr cl, 1 2-hr lab. Prereq: 880 or permission of instructor.

**883\* Life-Cycle Design Optimization G 3**

Life-cycle optimization of competitive products with emphasis on mathematical tools and real-world examples. Ishii.

Sp. Qtr. 2 1½-hr cl. Prereq: 661 or 862 or permission of instructor.

**888 Mechanical Engineering Seminar G 1**

Lecture and discussion of current topics related to mechanical engineering presented by graduate students, staff, and guest speakers. Waldron.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Mech eng grad standing. Repeatable to a maximum of 3 cr hrs for MS degree and 3 additional cr hrs for PhD degree.

**894 Group Studies in Mechanical Engineering G 1-6**

Special topics in mechanical engineering. The particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**993 Advanced Problems in Mechanical Engineering G 1-5**

Provides the opportunity to pursue special problems in mechanical engineering not otherwise covered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**999 Research in Mechanical Engineering G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Medical Biochemistry

333 Hamilton Hall, 1645 Neil Avenue, 292-5451. Fax: 292-4118.

**311 Allied Medical Biochemistry U 4**

Human biochemistry with emphasis on metabolism and applications to clinical chemistry and human nutrition; pertinent organic chemistry will be included. Jurkowitz.

Au Qtr. 4 cl. Prereq: Chem 102 or 122 and enrollment or intended enrollment in a program of the School of Allied Medical Professions.

**312 Allied Medical Biochemistry U 4**

A continuation of 311. Jurkowitz.

Wi Qtr. 4 cl. Prereq: 311.

**601 Medical Biochemistry I G 4**

A three-quarter sequence of basic biochemistry exclusively for medical students in a joint graduate program.

Au Qtr. 5 cl. Prereq: Chem 252 and 255, or equivs., and enrollment in the College of Medicine.

**602 Medical Biochemistry II G 4**

Continuation of 601.

Wi Qtr. 5 cl. Prereq: 601.

**603 Medical Biochemistry III G 4**

Continuation of 602.

Sp Qtr. 5 cl. Prereq: 602.

**641 Dental Biochemistry P 4**

Chemistry and metabolism of carbohydrates, lipids, and proteins; digestion and absorption; elements of nutrition as they relate to dentistry, especially mineral and bone metabolism. Nuenke.

Au Qtr. 4 cl, 1 conf. Prereq: Chem 252.

**642 Dental Biochemistry P 4**

Continuation of 641. Nuenke and Panganamala.

Wi Qtr. 4 cl, 1 conf. Prereq: 641 and enrollment in College of Dentistry.

**761 Advanced Biochemistry: Proteins U G 3**

An advanced treatment of protein biochemistry.

Au Qtr. 3 cl. Prereq: Biochem 614 and Chem 253, 255 and 521; or equivs. Not open to students with credit for 705, Biochem 761, or Chem 761. Cross-listed in Biochemistry and Chemistry. Register under Chemistry.

**762 Advanced Biochemistry: Enzymes U G 2**

An advanced treatment of enzymology. Hille.

Au Qtr. 2 cl. Prereq: Biochem 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 705, Biochem 705 or 762, or Chem 762. Cross-listed in Biochemistry and Chemistry.

**763 Advanced Biochemistry: Membranes and Bioenergetics U G 2**

An advanced treatment of membranes and bioenergetics.

Sp Qtr. 2 cl. Prereq: Biochem 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 705, Biochem 705 or 763, or Chem 763. Cross-listed in Biochemistry and Chemistry. Register under Chemistry.

**764 Advanced Biochemistry: Integration of Metabolism U G 3**

An advanced treatment of the regulation and integration of mammalian biochemical systems. Brierley.

Sp Qtr. 3 cl. Prereq: Chem 253, 255, 521 and Biochem 615 or equivs. Not open to students with credit for Biochem 764 or Chem 764. Cross-listed with Biochemistry and Chemistry.

**765 Advanced Biochemistry: Physical Biochemistry U G 2**

Diffusion, electrophoresis, sedimentation, light and x-ray scattering, x-ray and neutron diffraction, fluorescence, polarimetry, mass spectroscopy, and nuclear magnetic resonance.

Wi Qtr. 2 cl. Prereq: Chem 253, 255, 521 and Biochem 615; or equivs. Not open to students with credit for Biochem 765 or Chem 765. Cross-listed with Biochemistry and Chemistry. Register under Biochemistry.

**766 Advanced Biochemistry: Nucleic Acid Chemistry and Structure U G 2**

Reactions, synthesis, and conformations of nucleosides, nucleotides, oligonucleotides, and polynucleotides.

Sp Qtr. 2 cl. Prereq: Chem 253, 255, 521, and Biochem 615; or equivs. Not open to students with credit for Biochem 766 or Chem 766. Cross-listed with Biochemistry and Chemistry. Register under Biochemistry or Chemistry.

**793 Individual Studies in Medical Biochemistry P 8,16, or 24 G 2-15**

Qualified students may avail themselves of the facilities of the department for conducting a minor investigation under the direction of a senior staff member.

Su, Au, Wi, Sp Qtrs. 1 or more months for professional credit; offered all months. Prereq: 612 or equiv with written permission of instructor. Repeatable to a maximum of 15 or hrs for grad credit or to 24 or hrs for professional credit. This course is graded S/U.

**821\* Physical Biochemistry of Proteins G 3**

Protein structure (primary, secondary, tertiary, and quaternary) in the crystal state and in solution and their relationship to function. Alben.

Wi Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

**822\* Bioenergetics G 3**

Flow of energy in biological systems; photosynthesis; oxidative phosphorylation; methods of studying mitochondria, chloroplasts, and other organelles. Brierley.

Au Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

**823\* Metabolic Control Mechanisms G 3**

A study of selected normal aberrant biochemical controls with emphasis on hormones or other modulators, development, detoxification, and neoplasia or other relevant diseases. Webb.

Sp Qtr. 2 1½-hr cl. Prereq: 1 yr of grad biochem or permission of instructor.

**824\* Enzymology G 3**

Selected topics in structure/function relationships, mechanisms of catalysis, kinetics, and metabolic interrelations of enzyme systems. Hille.

Sp Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

**825\* Neurochemistry G 3**

Biochemistry and metabolism of the nervous system with discussion of synaptic transmission, memory theories, genetic defects, and associated diseases. Hai.

Wi Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

**826\* Current Topics in Lipid Biochemistry G 3**

Discussion of recent developments in one or more areas of lipid biochemistry; membranes, prostaglandins, and peroxidation; topics to be announced. Panganamala.

Sp Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

**827\* Biochemical Mechanisms of Carcinogenesis G 3**

Mechanisms of carcinogenesis caused by radiation, polycyclic hydrocarbons, halogenated organics, and RNA and DNA viruses. Milo.

Wi Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

**Viral Oncology**

See Med Micr 841—The immunological, virological, epidemiological, and molecular aspects of DNA and RNA tumor diseases.

**850 Seminar G 1-2**

Au, Wi, Sp Qtrs. Prereq or concur: One yr of biochem. Repeatable. This course is graded S/U.

**999 Research in Medical Biochemistry G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Medical Communications

School of Allied Medical Professions

206 School of Allied Medical Professions Building, 1583 Perry Street, 292-1044

**200† Introduction to Biomedical Communications U 1**

Introduction to the Biomedical Communications field; provides a survey of its formation, present functional organization, and trends for the future.

Sp Qtr. 1 cl.

**400† Introduction to Medical Communications U 4**

Application of communication theory to the health care system and the role of the Medical Communications specialist; survey of communication related areas of the health care system.

Au Qtr. 4 cl. Prereq: Admission to med comm or written permission of the instructor.

**403† Visualizing the Disease Process U 2**

Visual analysis of gross disease process in organs and organ systems; emphasis on comparison and contrast of normal and diseased organ states.

Sp Qtr. 1 2-hr cl. Prereq: Med comm or med illus jr standing, CBN&amp;Anat 199.04, and Classics 210.

**520† Instructional Product Design in Biomedical Communications U 5**

Design and development of instructional products and materials for health related fields. Includes production of student made materials and critical analysis of existing materials.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: Admission to med comm or written permission of instructor.

**522 Principles of Continuing Health Professional Education U 3**

Nature of continuing education for health professionals; history, learner characteristics, needs assessment, program development, evaluation; comparisons between health professions; role of universities, hospitals, professional associations, and industry.

Au Qtr. 3 cl.

**525† Advanced Production Techniques in Biomedical Communications U 5**

Advanced study of television and related media production including the development and maintenance of production facilities in biomedical settings.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: Admission in Med Comm.

**530† Biomedical Writing and Editing U 3**

Fundamentals of writing and editing health-related articles, abstracts, news releases, and other medical materials; evaluation of health-related journals.

Au Qtr. 3 cl. Prereq: English 110; English 210 or Journal 201; jr standing in biomed comm.

**532† Development and Evaluation of Health Care Media U 3**

Selection, development, evaluation, and effective use of print media in biomedical communication.

Wi Qtr. 3 cl. Prereq: 400, 530, and 545.01.

**535† Health Care Marketing U 3**

Overview of the basic principles of marketing and their relationship to the delivery of health care services.

Sp Qtr. 3 cl. Prereq: Biomed comm major or related major with permission of instructor.

**589 Practicum U 3**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 3rd qtr jr in med comm. Repeatable to a maximum of 9 cr hrs. Travel and subsistence costs for practicum must be borne by student.

**589.01 Medical Illustration and Graphics**

Application of biomedical communications principles and skills to field settings; advanced study of medical graphic arts production; completion of projects.

**589.02 Health Care Media Production**

Application of biomedical communications principles and theory to field settings; investigation of still or electronic media production; completion of projects.

**589.03 Health Care Education and Training**

Application of biomedical communications principles and theory to field settings; investigation of health care staff training and/or patient education problems; completion of projects.

**589.04 Health Care Public Information and Medical Writing**

Application of biomedical communications theory and principles to field settings; investigation of health care public information and medical writing problems; completion of projects.

**589.05 Biomedical Communications Research**

Application of biomedical communications theory and principles to field settings; development and implementation of biomedical communications research projects.

**595 Seminars in Biomedical Communications U 1-3**

Selected studies of theory and practice in biomedical communication with emphasis on the process of development, instruction, evaluation, and change of systems, their objectives and products.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: 400 and sr standing, or permission of instructor. Repeatable to a maximum of 9 cr hrs.

**612 Managing the Health Care Training Function at the Departmental Level U G 3**

The techniques of in-service training programs; discussion and analysis of the role and function of the training manager.

Wi. Qtr. 1 2-hr cl, 1 1 1/2-hr cl. Prereq: Sr or grad standing in alli med or health-related major, jr or sr med comm major. Cross-listed in Allied Medicine.

**627 Management of Patient Education Systems U G 3**

Planning, organizing, and evaluating patient education systems and programs in health care organizations.

Au Qtr. 1 2-hr cl, 1 hr arr. Prereq: Sr. standing in biomed comm or related health professions major or grad standing in health professions. Not open to students with credit for Alli Med 627. Cross-listed in Allied Medicine.

**640 Health Promotion and Disease Prevention in Acute Care Organizations U G 3**

Programs in acute care institutions are examined as a means of marketing services, reducing health care costs, and changing the roles of allied health practitioners.

Sp Qtr. 2 1 1/2-hr cl. Prereq: Sr or grad standing in allied health or a related field. Not open to students with credit for Alli Med 640. Cross-listed in Allied Medicine.

**650 Advanced Field Studies in Medical Communications I U 8**

Study and application of educational uses of communication processes and media in a health setting.

Wi Qtr. 1 2-hr cl, 18 hrs arr. Prereq: Sr standing in med comm and written permission of instructor.

**660 Advanced Field Studies in Medical Communications II U 8**

Diagnosis and planning for communication services in various health environments.

Sp Qtr. 1 2-hr cl, 18 hrs arr. Prereq: 650.

**665 Issues and Trends in Biomedical Communications U 3**

Exploration and analysis of the issues and trends influencing the Biomedical Communications environment.

Au Qtr. 2 1 1/2-hr cl. Prereq: Sr standing in med comm or med illus.

## Medical Dietetics

School of Allied Medical Professions

516 School of Allied Medical Professions Building, 1583 Perry Street, 292-0635

**201 Careers in Dietetics U 1**

Roles, responsibilities, and educational requirements for a career in dietetics; current employment opportunities. Boyne.

Wi Qtr. 1 cl.

**420 Management in Medical Dietetics U 5**

Application of management process to nutritional care of patients in the health care institution. Wolf.

Sp Qtr. 5 cl. Prereq: Humn Ntr 310, 314, 350, and 370; Alli Med 630.

**422 Introductory Dietetic Practice U 6**

Application of food service management and patient nutritional care theory in the practice setting.

Su Qtr. 32 hrs clinic. Prereq: 420, 521, and 531. Enrollment in med diet.

**520 Nutrition and Human Metabolism I U 4**

Metabolism of essential nutrients at cellular and intact levels of the body: causes, results, and dietary management of alterations in metabolism of these nutrients. Burge.

Wi Qtr. 3 cl, 3-hr lab. Prereq: 545, 546, or permission of instructor. Not open to students with credit for 410.

**521 Nutrition and Human Metabolism II U 4**

A continuation of 520. Burge.

Sp Qtr. 3 cl, 3-hr lab. Prereq: 520.

**530 Nutritional Care Process I U 2**

Utilizing assessment tools and techniques for gathering subjective and objective dietary and biomedical data for planning nutritional care. Boyne.

Wi Qtr. 1 cl, 3-hr lab. Prereq: Jr standing in med diet, Concur: 520.

**531 Nutritional Care Process II U 2**

Evaluating assessment data for planning, implementing, evaluating, and documenting nutritional care.

Sp Qtr. 1 cl, 3-hr lab. Prereq: 530. Wardlaw.

**545 Human Nutrition and Dietetics U 4**

Integration of principles related to foods, nutrients, physiology, and biochemistry as they apply to nutritional care for the promotion of health and prevention of disease. Wardlaw.

Au Qtr. 4 cl. Prereq: Chem 102, Biology 101, and Humn Ntr 310 and 314

**546 Research Applications in Dietetics U 2**

A review of the research process in dietetics with concurrent experience in laboratory assessment of nutritional status.

Au Qtr. 1 hr cl, 3-hr lab. Prereq: Stat 135; Prereq or Concur: 545 or equiv.

**595 Seminar U 1-3**

Conferences, group discussions, and presentations of selected topics.

Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor.

**620 Advanced Management in Medical Dietetics U 2**

Emphasis on managerial skills in food service or nutrition care units in health care organizations. Schiller.

Wi Qtr. 2 cl. Prereq: 422 or sr standing.

**622 Advanced Management Practice in Medical Dietetics U 2**

Supervised dietetic practice in a health care facility with emphasis on performing advanced managerial functions, tasks, and activities.

These courses are graded S/U.

**622.01 Advanced Management Practice I**

Supervised experience in food service operations.

Au, Wi Qtrs. 2 cl, 18 hrs. practice. Prereq: 420, 422, and sr standing in med diet.

**622.02 Advanced Management Practice II**

Supervised experience in management of food service personnel.

Au, Wi, Sp Qtrs. 2 cl, 18 hrs practice. Prereq: 622.01.

**636 Nutrition Education and Counseling U 3**

Principles of individual and group teaching and nutrition counseling as applied to responsibilities of the dietitian. Schiller. Boyne.

Wi Qtr. 2 cl, 3-hr lab. Prereq: Permission of instructor.

**637 Health Promotion and Community Nutrition U 4**

Study of nutrition and health risk appraisal, intervention strategies, and cost effectiveness of risk reduction for selected populations in public and private health programming. Bartlett.

Wi Qtr. 4 cl. Prereq: Humn Ntr 310, Med Diet 545, or permission of instructor.

**638 Maternal and Pediatric Nutrition U 4**

Physiological basis of nutritional needs for pregnancy, lactation, infancy, and childhood; covers physical, psychological, and social factors related to growth. Boyne.

Au Qtr. Prereq: Sr standing in med diet and permission of instructor.

**639 Geriatric Nutrition U 2**

Study of nutritional requirements, nutritional status assessment, and other selected issues in delivery of health care to older adults. Bartlett.

Sp Qtr. 2 cl. Prereq: Humn Ntr 310; Humn Ntr 615 or Med Diet 545 or permission of instructor.

**645 Advanced Medical Dietetics U 2**

Advanced study of complex metabolic problems; nutrition support strategies, their indications, and implementation. Wardlaw.

Au Qtr. 2 cl. Prereq: 545, sr standing, and permission of instructor.

**646 Advanced Clinical Practice U 2**

Clinical experiences and post-clinical conferences with emphasis on assuming responsibility for patient nutritional care based on standards of practice.

Prereq: Sr standing and permission of instructor. These courses are graded S/U.

**646.01 Advanced Clinical Practice I**

Au, Wi Qtrs. 2 cl, 18 hrs clinic.

**646.02 Advanced Clinical Practice II**

Au, Wi Qtrs. 2 cl, 18 hrs clinic.

**646.03 Advanced Clinical Practice III**

Au, Wi, Sp Qtrs. 2 cl, 18 hrs clinic.

**685 Supervised Professional Practice U 2**

Clinical experience and post-clinical conferences with emphasis on observation and practice in pediatric, geriatric, community, and health promotion sites.

Au, Wi, Sp Qtrs. 2 cl, 18 hrs clinic. Prereq: Sr standing in med diet. Not open to students with credit for 689. These courses are graded S/U.

**685.01 Pediatric Nutrition**

Not open to students with credit for 689.01.

**685.02 Community Nutrition Services**

Not open to students with credit for 689.03.

**688 Medical Dietetics Practicum U 7**

Supervised professional practice in various health care settings.

Sp Qtr. 1 cl, 40 hrs clinic (7 wks). Not open to students with credit for 646.04. This course is graded S/U.

**693 Individual Studies in Nutrition or Dietetics U G 1-5**

Problems in various phases of nutrition or medical dietetics not included in current course offerings.

Su, Au, Wi, Sp Qtrs. Prereq: Grad or sr standing in med diet and permission of instructor. This course is graded S/U.

**695 Seminar U G 1-3**

Conferences and group discussions of selected topics.

Su, Au, Wi, Sp Qtrs. 2 1½-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**838\* Maternal and Pediatric Nutrition**

Physiology of pregnancy and lactation including women with special needs; physiology of the neonate, normal growth and development 0-12 months, and nutritional disorders of infancy.

Sp Qtr. Prereq: Grad standing, 5 hrs physiology and biochemistry, Humn Ntr 310 or above, permission of instructor.

**838.01 Physiological and Theoretical Bases for Maternal and Pediatric Needs G 3**

Physiology of pregnancy and lactation including special needs; physiological changes in the neonate; normal growth and development during the first year; and nutritional disorders of the pediatric patient. Boyne.

3 cl.

**838.02 Clinical Applications in Maternal and Pediatric Nutrition G 2**

Experiences in the perinatal and pediatric setting to enhance the students' clinical assessment and counseling skills in these specialized settings.

6 hrs clinical. This course is graded S/U.

**856\* Nutrition in Critical Care**

The pathophysiological background in systemic disease, surgical intervention and nutritional interrelationships among disease, treatments, and nutrition. Burge.

Au Qtr. 2 1½-hr cl. Prereq: Permission of instructor. Not open to students with credit for Prev Med 856.

**856.01 Lecture G 3**

Au Qtr. 2 1½-hr cl.

**856.02 Practicum G 2**

Au Qtr. 1 4-hr clinic. This course is graded S/U.

**857\* Nutrition and Metabolic Imbalance G 3**

The pathophysiological background of metabolic imbalances encountered in the clinical setting and the rationale for nutritional therapies.

Wi Qtr. 2 1½-hr cl. Prereq: 856.01, Fd Sc&Nu 761 or permission of instructor.

**858\* Community Nutrition G 3**

Methods of discovering problems in public health nutrition and practical application of nutrition information for improvement of nutritional status at various age levels. Bartlett.

Au Qtr. 2 1½-hr cl. Prereq: 638 and 856, or permission of instructor. Not open to students with credit for Prev Med 858.

**889 Clinical Practicum G 5**

Advanced, specialized orientation to clinical dietetics including resource and patient management through individual conferences, group conferences, team conferences, and clinical practice.

Su, Au, Wi, Sp Qtrs. 1 cl, 16-hrs clinic. Prereq: Registered or registration eligible dietitian and written permission of instructor. Subdivisions are repeatable to a maximum of 10 cr hrs. These courses are graded S/U.

**889.01 Crisis Care Practicum****889.02 Primary Care Practicum**

## Medical Illustration

School of Allied Medical Professions

206 School of Allied Medical Professions Building, 1583 Perry Street, 292-5517

**545† Biomedical Graphic Arts Production U 4**

Study of graphic arts with emphasis on theory, terminology, and application in biomedical production.

**545.01 Introduction**

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Admission to Biomedical Communications Division and permission of instructor.

**545.02 Intermediate Study**

Wi Qtr. 2 3-hr labs. Prereq: 545.01 and permission of instructor.

**545.03 Advanced Applications**

Sp Qtr. 2 3-hr labs. Prereq: 545.02 and permission of instructor.

**635† Biophotographic Illustration U 3**

Photography as related to medicine for the medical illustrator including macro and gross specimens, clinical, biomedical, graphic, and reproduction.

Au Qtr. 1 cl, 2 2-hr lab. Prereq: Permission of instructor.

**640 Techniques U 5**

Advanced study for students in medical illustration including preparation of charts, graphs, medical and surgical illustrations, exhibits, and general work for a medical center.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

**693 Individual Studies U 1-5**

Advanced study in scientific illustration as related to medicine.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

## Medical Microbiology and Immunology

2078 Graves Hall, 333 West 10th Avenue, 292-5525

**625 Medical Microbiology P G 5**

Basic principles of Medical Microbiology and Immunology with direct application to infections of man.

Au Qtr. 40-hr lec.

**626 Medical Microbiology P G 5**

A more extensive and intensive application of basic principles of medical microbiology to infectious diseases.

Wi Qtr. 9-hr lec, 25-hr discussion. Prereq: 625 or permission of instructor.

**694 Group Studies U G 1-5**

Group Studies on special topics in Microbiology and Immunology.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 hrs.

**701 Cellular and Molecular Immunology U G 5**

Cellular and molecular mechanisms of immune response, cell recognition and communication, molecular biology of cell recognition structures, cytokines, and effector mechanisms. Lafuse.

Au Qtr. 5 cl. Prereq: Biochem 613, Mol Gen 501, or equiv. Not open to students with credit for Microbiol 701. Cross-listed in Microbiology.

**7541\* Medical Virology P G 5**

Primary emphasis on viruses important to man; fundamental properties of viruses, host cell-virus interaction, pathogenesis, and immunity. J. Hughes. Sp Qtr. 3 1-hr lec. Prereq: Written permission of instructor.

**757\* Diagnostic and Clinical Virology P G 5**

Laboratory procedures used for the diagnosis of human viral infections. Hughes.

Wi Qtr. 1 cl, 3 3-hr lab. Prereq: Enrollment in College of Medicine or written permission of instructor.

**764\* Bacterial Viruses P G 3**

Molecular biological study of bacteriophages emphasizing virulent and lysogenic phage host systems.

Sp Qtr. 2 1 1/2-hr cl. Prereq: Mol Gen 701, Biochem 702, or permission of instructor.

**793 Individual Studies in Medical Microbiology**

Prereq: Enrollment in College of Medicine or permission of instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course must be taken. These courses are graded S/U.

**793.06 Problems in Medical Microbiology P 6, 12, or 18 G 3-15**

1, 2, 3, or 4 months; offered all months (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Repeatable to a maximum of 24 cr hrs for professional credit.

**793.07 Diagnostic and Clinical Microbiology P G 6-18**

Experience in isolation and identification of micro-organisms from clinical specimens.

1, 2, 3, or 4 months (full time—prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: 626 and permission of instructor. Repeatable to a maximum of 24 cr hrs.

**794 Group Studies P G Arr**

One month, offered all months (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: Written permission of instructor. When registration is for 3 professional cr hrs, an additional 3 cr hr professional course must be taken. This course is graded S/U.

**8011\* Selected Topics in Advanced Immunology G 3**

Specific topics will vary from year to year in the general areas of immunochemistry, immune regulation, and cellular immunity.

Wi Qtr. 3 cl. Prereq: 701 or equiv course in basic immunology or permission of instructor. Repeatable to a maximum of 9 cr hrs. Intended for advanced grad students, medical residents, and postdoctoral fellows.

**8041\* Instrumentation and Techniques in Medical Microbiology G 5**

Theory and application of techniques used to purify and characterize nucleic acids, lipids, and proteins; theory and operation of equipment and instruments used. Parris, Pollack, and Williams.

Wi Qtr. 2 2-hr cl, 12 lab hrs. Prereq: 625, 626; and MBiochem 611, 612, or equiv; and written permission of instructor.

**814 Current Topics in Medical Microbiology G 1**

Au, Wi, Sp Qtrs. Prereq: Med micr grad standing or permission of instructor. Repeatable with permission of instructor to a maximum of 15 cr hrs. This course is no longer graded S/U.

**8241\* Medical Parasitology G 3**

Discussion of structure, growth, development, epidemiology, and pathogenesis of animal parasites infectious for man, together with practical experience in identification. Kapral.

Wi Qtr. 2 1-hr lec, 1 3-hr lab. Prereq: 626 and permission of instructor.

**833\* Current Immunological Techniques G 4**

Current techniques in cellular and humoral immunology as applicable in research conducted by students. Lafuse.

Wi Qtr. 2 4-hr labs. Prereq: 701 or equiv course in basic immunology. Not open to students with credit for Microbiol 833. Cross-listed in Microbiology.

**8411\* Viral Oncology G 3**

The immunological, virological, epidemiological, and molecular aspects of DNA and RNA tumor viruses. Shaw.

Sp Qtr. 3 cl. Prereq: Phys Chem 612 or 709; Med Micr 754 or Microbiol 649. Not open to students with credit for Microbiol 841, Phys Chem 841, or Vet Path 841. Cross-listed in Microbiology, Physiological Chemistry, and Veterinary Pathobiology.

**850 Advanced Seminar in Medical Microbiology G 3**

An advanced course with topics in different areas of medical microbiology in a seminar setting; students will present papers related to these chosen topics.

Au Qtr. 3 cl.

**854\* Molecular Basis of Antibiotic and Chemotherapeutic Action G 3**

Action of antibiotic and chemotherapeutic agents on specific sites in the metabolism and/or structures of cells stressing the comparative biochemistry of bacterial and animal cells. Ottolenghi.

Wi Qtr. 3 1-hr lec. Prereq: 625; or Biochem 513 or equiv; Microbiol 761; or permission of instructor.

**864 Dynamic Aspects of Bacterial Infections G 5**

An analysis of the dynamic interrelationships between the host's and parasite's inherent physiological capabilities and how these expressions (other than specific immunity) are mutually modified. Kapral and Ottolenghi.

Sp Qtr. 5 cl. Prereq: 625 or Microbiol 625 or equiv or permission of instructor.

**874\* Advanced Topics in Molecular Biology of Eukaryotes G 3**

Current information on structure and function of two aspects of molecular biology of eukaryotes; emphasis on experimental rationale and techniques. Williams and Parris.

Wi Qtr. 1 2 1/2-hr cl. Prereq: Biochem/Genetics 611, or Biochem 709, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**999 Research in Medical Microbiology G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in med micr. This course is graded S/U.

## Medical Record Administration

School of Allied Medical Professions

543 School of Allied Medical Professions Building, 1583 Perry Street, 292-0567

**500 Medical Terminology U 3**

Terminology pertaining to the treatment of disease, including standard abbreviations, anatomic, diagnostic, symptomatic, eponymic, laboratory, pathologic, radiology, anesthetic, operative, and drug terms.

Au Qtr. 3 cl. Not open to student with credit for Alli Med 500.01 and 500.02. Cross-listed in Allied Medicine.

**520 Health Information Documentation, Analysis, Storage, and Retrieval Systems U 5**

Introduction to quantitative and qualitative evaluation of health information, records management including methods of information storage and retrieval systems.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: Written permission of instructor.

**525 Organizational Analysis of Health Care Facilities U 3**

Analysis of administration, governing board, medical staff committees, licensing, accrediting and certifying agencies in relation to health care facilities, and health information requirements.

Au Qtr. 3 cl. Prereq: Written permission of instructor.

**535 Classification, Indexing, and Registry Systems in Health Care U 5**

Design, implementation, and evaluation of disease and operation classification systems; use of manual and computerized medical information indexing and registry systems.

Wi Qtr. 4 cl, 1 3-hr lab. Prereq: 501 or 520 or written permission of instructor.

**540 Health Data Collection and Analysis U 3**

Collection, computation, presentation, and analysis of health and administrative statistics which include definitions, sources, and types of reporting systems.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 520 or written permission of instructor.

**545 Legal Aspects of Hospital and Medical Record Services U 3**

Legal system, hospital and staff liability, privacy, confidentiality, and legal requirements affecting the control and release of health information and medical records.

Sp Qtr. 3 cl. Prereq: 501 or 520 or written permission of instructor.

**589 Clinical Technical Affiliation U 3**

Practical applications in medical record services.

Su, Au, Wi, Sp Qtrs. 1 cl, 1 8-hr clinical study. Prereq: 520 or written permission of instructor. This course is graded S/U.

**620 Management of Case Mix and Utilization Review Systems U G 3**

Introduction to hospital case-mix measurement systems with emphasis on DRG-based reimbursement and government review processes.

Au, Wi Qtrs. 3 cl. Prereq: Enrollment in med rec or written permission of instructor.

**635 Quality Assurance of Health Care Services U 4**

Analysis of federal, state, and accrediting agency standards and regulations for quality assurance and utilization, review of health care services with emphasis on review procedures and audit methodologies.

Au Qtr. 2 1½-hr cl, 1 2-hr lab. Prereq: 520 or written permission of instructor.

**640 Planning and Staffing of Medical Record Services U 3**

Application of human resource management to medical record services.

Au Qtr. 2 cl, 1 3-hr lab. Prereq: 520 or written permission of instructor.

**645 Management Control Systems for Medical Record Services U 3**

Application of work measurement, work standards, physical, and financial resource management for a medical record service.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 520 or written permission of instructor.

**648 Microcomputer Applications in Health Science U G 3**

Overview of microcomputer applications in health sciences with practical applications related to discipline specific needs.

Au Qtr. 2 2-hr cl. Prereq: Cptr/Inf 201 or 211, or permission of instructor. Cross-listed in Allied Medicine.

**650 Applications of Computers in Health Care U G 3**

Basic concepts related to the application, analysis, planning, and use of computers in health care, education, and research.

Sp Qtr. 2 2-hr cl. Cross-listed in Allied Medicine.

**654 Computer Applications in Managing Health Information Systems U G 3**

Information resource management in health care, health information databases, software applications, and systems selection.

Wi Qtr. 3 cl. Prereq: 648, Alli Med 650, or written permission of instructor. Cross-listed in Allied Medicine.

**687 Information Services in Special Care Facilities U 3**

Discussion of record systems in special care facilities with emphasis on health information services.

Wi Qtr. 2 cl, 1 6-hr clinical study. Prereq: 520 or written permission of instructor.

**689 Clinical Management Affiliation U 1-10**

Application of managerial techniques in the organization and administration of health information and record services.

Su, Au, Wi, Sp Qtrs. 32-40 hrs clinical study wks. Prereq: 589. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

**693 Individual Studies U G 1-5**

Problems in various phases of medical record administration not included in the regular course offerings.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

**695 Seminar U G 1-4**

A discussion of current trends, topics, procedures, and constraints affecting the medical record profession.

Su, Au, Wi, Sp Qtrs. 1-4 cl. Prereq: Admission to Med Rec Administration or grad standing. Repeatable to a maximum of 12 or hrs.

## Medical Technology

School of Allied Medical Professions

535 School of Allied Medical Professions Building, 1583 Perry Street, 292-7303

For related courses see Pathology.

**301 Introduction to Clinical Laboratory Science U 2**

Introduction to the science of clinical laboratory medicine and the profession of medical technology with limited laboratory practice, discussion, and lecture.

Au, Sp Qtrs. 1 cl, 2 3-hr lab. Prereq: Admission to Med Tech and/or permission of instructor.

**480 Fundamental Techniques in Medical Technology U 3**

Theory and application of techniques in the practice of medical technology, with emphasis on chemical analysis and microscopic evaluation of urine and other body fluids.

Au Qtr. 2 cl, 1 3-hr lab. Prereq: Admission to med tech or permission of instructor.

**500 Clinical Laboratory Microbiology U 2**

Basic theory and application of clinical laboratory techniques used to identify microorganisms pathogenic to humans.

Au Qtr. Prereq: Admission to Med Tech or permission of instructor.

**500.01 Lecture**

2 cl. Concur 500.02.

**500.02 Laboratory**

2 3-hr labs. Concur: 500.01.

**510 Clinical Laboratory Hematology U 2**

Basic theory and application of clinical laboratory techniques used to evaluate the formed elements in blood and the hemostatic mechanism.

Wi Qtr. Prereq: 480 or permission of instructor.

**510.01 Lecture**

Wi Qtr. 2 cl. Concur: 510.02.

**510.02 Laboratory**

Wi Qtr 2 3-hr labs. Concur: 510.01.

**515 Advanced Clinical Laboratory Hematology U 2**

Advanced theory and application of clinical laboratory techniques used to evaluate the formed elements of the blood and hemostatic mechanism.

Au Qtr. Prereq: 480, 510.01, 510.02, or permission of instructor.

**515.01 Lecture**

2 1-hr cl. Concur: 515.02

**515.02 Laboratory**

2 3-hr labs. Concur: 515.01.

**525 Advanced Clinical Laboratory Microbiology U 4**

Advanced theory and application of clinical laboratory techniques used to identify bacteria, fungi, parasites, and viruses pathogenic to humans.

Wi Qtr. Prereq: 480, 500.01, 500.02, 530.01, 530.02, or permission of instructor.

**525.01 Lecture**

4 1-hr cl. Concur: 525.02.

**525.02 Laboratory**

4 3-hr labs. Concur: 525.01.

**530 Clinical Laboratory Immunology**

Theory and application of clinical laboratory techniques employing antigen-antibody reactions in the study of disease.

Sp Qtr. Prereq: 480 and permission of instructor.

**530.01 Lecture U 2**

2 cl. Concur: 530.02.

**530.02 Laboratory U 2**

2 3-hr labs. Concur: 530.01.

**535 Clinical Laboratory Immunohematology**

Theory and application of clinical laboratory immunologic techniques for blood grouping, antibody identification, and preparation of blood components for transfusion therapy.

Prereq: 480 and permission of instructor.

**535.01 Lecture U 3**

Au Qtr. 3 cl. Prereq: Admission to med tech or permission of instructor. Concur: 535.02.

**535.02 Laboratory U 3**

Au Qtr. 3 3-hr labs. Prereq: Admission to med tech or permission of instructor. Concur: 535.01.

**540 Clinical Laboratory Chemistry U 2**

Wi Qtr. Prereq: 480, and permission of instructor.

**540.01 Lecture**

Theory of clinical laboratory techniques to identify and quantitate chemical analytes in body fluids; instrumentation, method evaluation, and quality control are stressed.

Wi Qtr. 2 cl. Prereq: Admission to med tech or permission of instructor. Concur: 540.02.

**540.02 Laboratory**

Application of clinical laboratory techniques to identify and quantitate chemical analytes in body fluids; instrumentation, method evaluation, and quality control are stressed.

Wi Qtr. 2 3-hr labs. Concur: 540.01.

**545 Advanced Clinical Laboratory in Chemistry U 3**

Sp Qtr. Prereq: Admission to med tech or permission of instructor.

**545.01 Advanced Clinical Laboratory in Chemistry: Principles**

Principles of clinical chemistry methods; emphasis on reference range and principles associated with quantitation for each analyte.

3 cl. Concur: 545.02.

**545.02 Advanced Clinical Laboratory in Chemistry: Laboratory**

Laboratory application of clinical chemistry principles.

3 3-hr labs. Concur: 545.01.

**560 Clinical Laboratory Data Correlations U 2**

A case study approach for integrating medical laboratory results contributing to a laboratory diagnosis and understanding of pathophysiology.  
Sp Qtr. 2 cl.

**580 Supervision of Clinical Laboratories U 2**

Application of human, physical, and financial resource management principles to the supervision of clinical laboratories.  
Sp Qtr. 2 cl.

**589 Clinical Practice****589.01 Clinical Practice in Hematology U 2-4**

Application of medical laboratory techniques under supervision in hematology, hemostasis, and body fluid analysis.

Su, Au, Wi, Sp Qtrs. 50-100 hrs clinical. Prereq: 301, 480, 510.01, 510.02, 515.01, 515.02, and Pathol 501, and permission of instructor. Repeatable to a maximum of 4 cr hrs. Not open to students with credit for 515. This course is graded S/U.

**589.02 Clinical Practice in Microbiology U 2-4**

Application of medical laboratory techniques under supervision in bacteriology, parasitology, mycology, and virology.

Su, Au, Wi, Sp Qtrs. 50-100-hrs clinical labs. Prereq: 500.01, 500.02, 508, 520.01, 520.02, 525.01, 525.02, and Pathol 502. Repeatable to a maximum of 4 cr hrs. Not open to students with credit for 515. This course is graded S/U.

**589.03 Clinical Practice in Transfusion Service U 2-4**

Application of medical laboratory techniques under supervision in immunohematology and transfusion services.

50-100 hrs. clinical. Prereq: 530.01, 530.02, 535.02, and Pathol 503. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

**589.04 Clinical Practice in Clinical Chemistry U 2-4**

Application of medical laboratory techniques under supervision in clinical chemistry laboratory.

Su, Au, Wi, Sp Qtrs. 50-100 hrs clinical. Prereq: 540.01, 540.02 and Pathol 504. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

**589.05 Clinical Practice in Immunology U 2**

Application of medical laboratory techniques under supervision in immunology laboratory.

Su, Au, Wi, Sp Qtrs. 50 hrs clinical. Prereq: 301, 480, 530.01, 530.02, and Pathol 503. This course is graded S/U.

**589.06 Clinical Practice in Laboratory Science U 1**

Application of medical laboratory techniques under supervision in clinic laboratories and other non-hospital laboratory settings.

Su, Au, Wi, Sp Qtrs. 25 hrs clinical. Prereq: 301, 480, and permission of instructor. This course is graded S/U.

**595 Seminar U 1-3**

Discussion of issues and trends in laboratory medicine; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to med tech and permission of instructor. This course is graded S/U.

**610 Administration in Laboratory Medicine G 3**

Principles of administration applied to the management of health care services in laboratory medicine. Snyder.

Wi Qtr. 3 cl. Prereq: Grad standing in pathol or alli med, pathol resident or permission of instructor. Cross-listed in Pathology.

## Medicine, College of

209 Meiling Hall, 370 West 9th Avenue, 292-5674

**661 MED I: Medical Humanities and Behavioral Sciences P 4 or 8**

A multidisciplinary study of human behavior, the art of medicine, ethics, and the relationships of the physician with patient, self, family, and society.

Au, Wi, Sp Qtrs. Prereq: Enrollment in College of Medicine. Repeatable to a maximum of 24 cr hrs. Registered medical students only. This course is graded S/U.

**662 MED I: Basic Medical Sciences P 4, 5, 6, 8, 16, 20, or 24**

Study of the whole man in an unified, patient-oriented interdisciplinary manner; study of various aspects of normal life processes by means of history taking, physical examinations, and diagnostic techniques in preparation for subsequent study of the ill patient, disease entities, and methods of treatment.

Au, Wi, Sp Qtrs. Concur: 661. Repeatable to a maximum of 180 cr hrs. This course is graded S/U.

**663 MED II: Pathophysiology and Manifestation of Disease P 4, 5, 6, 8, 16, or 24**

A multidisciplinary presentation of disease mechanisms, correlation of abnormalities of structure and function with cardinal symptoms and manifestations of disease; discussion of differential diagnosis of the most common patient complaints to reinforce the concepts and mechanisms of disease processes.

Au, Wi, Sp Qtrs. Prereq: 662. Repeatable to a maximum of 216 cr hrs. This course is graded S/U.

**664 MED III and IV: Clinical Medicine P 4, 5, 6, 8, 16, or 24**

Didactic and clinical instruction in family medicine, internal medicine, obstetrics and gynecology, pediatrics, psychiatry, and surgery; experience in outpatient, community, and inpatient services.

Su, Au, Wi, Sp Qtrs. Prereq: 663. Repeatable to a maximum of 248 cr hrs. Must repeat 152 cr hrs. This course is graded S/U.

**689 Practicum in Medicine P 0**

Applied experiences in medicine for 3rd and 4th year medical students rotating through clinical disciplines, externship experiences for medical students chosen for competitive programs at various agencies for field experience.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Med students with permission of Dean's Office. Repeatable to a maximum of 4 quarters. This course is graded S/U.

**693 Individual Studies P 4, 8, 16 or 24**

Special studies in introduction to medicine; nature of life processes; the pathophysiology and manifestation of disease; and supervised individualized program.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Limited to students working toward the MD degree. Repeatable to a maximum of 96 cr hrs. This course is graded S/U.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

3 cl. Repeatable to a maximum of 9 cr hrs. These courses are graded S/U. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology.

**700.01 Interprofessional Care U P G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

Wi Qtr.

**700.02 Changing Societal Values U P G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumer/clients/patients.

Sp Qtr.

**700.03 Ethical Issues U P G 3**

Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, mind control, malpractice, and social responsibility of the professions.

Au Qtr.

**700.04 Interprofessional Practicum in Clinical Settings P 3, 5**

Interprofessional teamwork in clinical settings.

Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**700.07 Interprofessional Approaches to Child Abuse and Neglect G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

Au Qtr. Prereq: Permission of instructor.

**797 Interdepartmental Seminar P G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Repeatable by permission.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. This course is graded S/U.

## Medieval and Renaissance Studies

306 Dulles Hall, 230 West 17th Avenue, 292-7495

**210† Court of Charlemagne U 5**

The Carolingian Renaissance: a unified interpretation of a crucial period in the transition of Europe from the classical age to the early Middle Ages.  
3 cl, 2 hr arr. BER/LAC/LAR course.

**212 Culture of a City-State in the Renaissance U 5**

Florence, 1200-1550; the study of an Italian Renaissance city-state with attention to its political, social, and economic structure; its religious, intellectual, and artistic activity.

3 cl, 2 hr arr. BER/LAC/LAR course.



**213† Medieval Moscow U 5**

The diversity of medieval Russian culture as represented by Moscow: religion, society, politics, art, and architecture.  
4 cl, 1 hr arr. BER/GEC/LAR course.

**214† Golden Age of Islamic Civilization U 5**

The Baghdad Caliphate of Harun ar-Rashid from 786 to 861 A.D.  
4 cl, 1 hr arr. BER/LAC course.

**215 Gothic Paris: 1100-1300 U 5**

Medieval Paris, its art, music, history, theatre, literature, and important individuals.  
3 cl, 2 hrs arr. BER/GEC/LAR course.

**294 Group Studies U 3-5**

Topic varies; special subjects not covered by regular courses.  
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 20 cr hrs or four offerings.

**693 Individual Studies U 1-5**

Students may register for individual directed study under this number for work not normally offered in courses.  
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Open only to majors in medieval. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Interdisciplinary group studies of selected topics in medieval and Renaissance culture and civilization.  
Su, Au, Wi, Sp Qtrs. Prereq: 10 cr hrs in medieval at the 200 level. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of study will be arranged for each student, with individual conferences, reports, and Honors thesis.  
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in the student's major area of study and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the BA degree *with distinction* in medieval. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**792 Interdepartmental Studies in the Humanities U G 5**

Two or more departments may collaborate in presenting colloquia on studies of mutual interest; topics to be announced.  
Au, Wi, Sp Qtrs. 1 or 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**899 Interdepartmental Seminar in the Humanities G 5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.  
Au, Wi, Sp Qtrs. 1 or 2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

## Microbiology

376 Biological Sciences Building, 484 West 12th Avenue, Tel: 292-2301; Fax: 292-8120

**294 Group Studies U 1-5**

Study of selected topics in microbial and cellular biology.  
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**301 The Biology of Pollution U 2**

A general consideration of the interactions of environmental pollutants and biological systems. Tuovinen.  
Au Qtr. 2 cl. Credit does count toward a major in micrbiol. BER/LAC/LAR course. NS Admis Cond course.

**509 Basic and Practical Microbiology U G 5**

Provides an understanding of microorganisms and their interaction with the human experience. Ackermann-Brown and Kolodziej.  
Su, Au, Wi, Sp Qtrs. 3 cl, 2 2-hr labs. Prereq: Biology 101 or 110 or 113 or H115 or Zoology 201. BER/GEC/LAR course. NS Admis Cond course.

**520 General Microbiology I U G 5**

Fundamental principles of microbiology and the characteristics of microorganisms with an emphasis on their structure, metabolism, growth, and classification. Kendrick and Krzycki.  
Au, Sp Qtrs. 3 cl, 2 3-hr labs. H520 (honors) may be available to students enrolled in an honors program or by permission of the honors committee chairperson. Prereq: Biology 114 or H116 and Chem 251. Prereq for H520: Biology 114 or H116, Chem 251 and permission of instructor. May not be taken concur with 509. GEC/LAR course.

**521 General Microbiology II U G 5**

Continuation of 520; basic principles of microbiology with an emphasis on bacterial genetics, ecology, and applied and pathogenic microbiology. Daniels, Darzins, Kendrick, and Mortensen.  
Wi Qtr. 3 cl, 2 3-hr labs. Prereq: 520 and Chem 252. May not be taken concur with 520. GEC/LAR course.

**522 Principles of Infection and Resistance U G 5**

A study of host-parasite relationships, with emphasis on pathogenicity and immunity. Galloway and Mortensen.  
Sp Qtr. 3 cl, 2 2-hr labs, 1 rec. Prereq or concur: 521 for majors; 509 for nonmajors.

**581 Microbial Genetics U G 5**

Integrated lecture and laboratory study of the structure, maintenance, expression, and exchange of genetic materials in microbial cells. Daniels.  
Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 521 or Mol Gen 500. Not open to students with credit for 680.

**592 Independent Study of Practical Microbiology U 2**

Students will work with course instructor, teaching assistants and associates to examine preparation and presentation of material, and gain experience working with students and faculty. Baker.  
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr micrbiol major and permission of coordinating adviser. This course is graded S/U.

**General Prerequisites for Courses Numbered 600 and 700**

*Unless otherwise indicated the prerequisites for 600- and 700-level courses are courses in organic chemistry and 10 hours of biological sciences.*

**603 Introduction to Biophysics U G 5**

Introductory course in the approach to biological phenomena from conceptual viewpoint of physical sciences; molecular to organismic levels of biological hierarchical structure. Cassim.  
Au Qtr. 5 cl. Prereq: Math 152, Chem 252, 10 cr hrs in biological sciences, Physics 113, or equiv with permission of instructor.

**624 Microbial Parasitism U G 5**

Overview of parasitic relationships with emphasis on host response as influenced by route of contact, nature of etiologic agent(s), host species, and environmental influences. Baker and Galloway.  
Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 522.

**629† Protozoa and Immunity U G 5**

Cell biology and immunology of parasitism in the context of pathogenic protozoa of Homo sapiens; lab: fresh and preserved materials; immunity of bloodstream trypanosomes; literature research project.  
Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 522 or 632 or permission of instructor.

**632† Cellular Aspects of the Immune Response****632.01† Lecture U G 3**

Cellular and molecular mechanisms of the immune response; characterization of cell products elaborated subsequent to antigenic stimulation; significance of these products in immunologic response. Zwilling.

Au Qtr. 3 cl. Prereq: 522 or equiv with permission of instructor.

**632.02† Laboratory U G 3**

Laboratory techniques in cellular immunology, including an assessment of lymphocyte and macrophage function flow cytometry, production of monoclonal antibody, and biological response modifiers. Zwilling.  
Au Qtr. 2 3-hr labs, 1-hr recit. Prereq or concur: 632.01 or equiv, and permission of instructor.

**634 Water Microbiology U G 5**

A basic study of the relationships and influence of aquatic environments on microorganisms and the effect of microbial metabolic processes on the quality of water. Tuovinen.  
Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 521.

**636 Food Microbiology U G 5**

The role of microorganisms in food preservation and processing with related sanitation and public health problems. Yousef.  
Au Qtr. 3 cl, 2 2-hr labs. Prereq: 509 or 521.

**641 Introduction to Quantum Biology U G 5**

An introduction to applications of elementary quantum mechanics to problems in biology; stress on conceptual rather than mathematic aspects. Cassim.  
Wi Qtr. 5 cl. Prereq: Chem 123, Math 152, Physics 113, and 10 cr hrs in biological sciences.

**649 Introductory Virology U P G 5**

Basic principles of virology with discussion of structures; virus-host cell interactions, detection, production and control; animal bacterial, insect and plant viruses used as examples. Darzins.  
Sp Qtr. 5 cl. Prereq: 509 or 521.

**652 General and Pathogenic Microbiology for Dental Students P G 4**

A survey of microbiology emphasizing infectious processes, basic principles, and immunology. Baker and Rosen.

Sp Qtr. 2 2-hr cl, 1 1-hr lab. Prereq: Dent 2nd yr standing.

**653 Oral Microbiology P G 4**

A study of the oral flora and the oral diseases having a microbial etiology. Rosen.

Sp Qtr. 3 cl, 1 1-hr lab. Prereq: 652 or equiv with written permission of instructor.

**Soil Microbiology**

See Agronomy 660.

**655 Animal Cell Culture Techniques U G 5**

Basic principles of tissue culture and organ culture; application of these procedures to basic and applied research in immunology and virology. Coggeshall.

Au Qtr. 2 3-hr labs, 1 2-hr rec. Prereq: 509 or 522 or equiv; 632 and 649 recommended, but not required.

**661 General Microbial Physiology U G 5**

Principles of microbial growth, of metabolism, of microbial structure and function, and regulation of microbial metabolism. Kendrick and Strohl.

Au Qtr. 5 cl. Prereq: 520 and Biochem 511. GEC/LAR course.

**665 Environmental Microbiology U G 3**

The role of microorganisms and underlying biological principles in elemental cycles and degradation of natural and man-made compounds. Tuovinen.

Sp Qtr. 3 cl. Prereq: 509 or 520 or equiv, and Chem 251. Not open to students with credit for Agronomy 665. Not available for audit. Cross-listed in Agronomy.

**680 Mechanisms of Gene Transfer in Microorganisms U G 3**

Molecular basis of transformation, conjugation and transduction in bacteria; biology and environmental significance of plasmids; techniques and results of *in vitro* gene cloning. Reeve.

Wi Qtr. 3 cl. Prereq: 521 or Mol Gen 500 or equiv with permission of instructor.

**692 Workshop U G 1-6**

Intensive study of a topic in microbiology; the format will depend upon the topic.

Arr. Prereq: Written permission of workshop director. Repeatable to a maximum of 6 cr hrs.

**693 Individual Studies U G 1-5**

Outlined by instructor to meet individual student's needs.

Su, Au, Wi, Sp Qtrs. Prereq: Microbiol 4th yr major or grad standing and permission of instructor. No more than 5 cr hrs can be counted toward an undergrad microbiol major. Not open to Plan B MS students. Repeatable only by undergrads to a maximum of 15 cr hrs. Not repeatable by grads. This course is graded S/U.

**694 Group Studies U G 2-5**

Group work on special topics in microbial or cellular biology.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****701 Cellular and Molecular Immunology U G 5**

Cellular and molecular mechanisms of immune response, cell recognition and communication, molecular biology of cell recognition structures, cytokines, and effector mechanisms. Zwilling and staff

Au Qtr. 5 cl. Prereq: Biochem 613, Mol Gen 501 or equiv. Not open to students with credit for Med Micr 701. Cross-listed in Medical Microbiology and Immunology.

**723 Immunology and Immunochemistry U G 3**

A thorough treatment of the basic phenomena involving antigens and antibodies, their physicochemical natures, and immunological reactions. Mortensen.

**723.01 Lecture**

Wi Qtr. 3 cl. Prereq: 522 or equiv with written permission of instructor.

**723.02 Laboratory**

Wi Qtr. 2 4-hr labs. Prereq or concur: 723.01.

**730 Immunology of Parasitic Infections U G 2**

A discussion of the role of immunity in the production, course, pathogenicity, diagnosis, and control of parasitic infections of humans and/or domestic animals. Barriga and staff.

Au Qtr. 2 cl. Prereq: Basic courses in parasitology and immunology; permission of instructor. Repeatable to a maximum of 4 cr hrs. Content varies according to major interests of class. Protozoa-arthropods taught in odd yrs; helminths in even yrs. Not open to students with credit for Vet Path 730. Cross-listed in Veterinary Pathobiology.

**750\* Fermentation Biotechnology U G 5**

Fundamentals of modern fermentation technology and industrial microbiology; with emphasis on product formation, culturing techniques and computer-controlled fermentation. Strohl.

Sp Qtr. 3 cl, 2 3-hr labs. Prereq: 521; or 509 and Biochem 511; or equivs.

**760 Advanced Bacterial Physiology U G 3**

Specialized metabolic pathways, regulation and control mechanisms, and bacterial biochemistry. Krzycki, Coordinator; team taught.

Sp Qtr. 3 cl. Prereq: 661 or permission of instructor.

**799 Microbiology Colloquium U G 1**

Mortensen.

Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**832 Advanced Cellular Immunology G 3**

Studies of immunity at the cellular level with emphasis on the induction and effector roles of macrophages and lymphocytes. Zwilling.

Sp Qtr. 3 cl. Prereq: 632 or equiv with permission of instructor.

**833\* Current Immunological Techniques G 4**

Current techniques in cellular and humoral immunology as applicable in research conducted by students.

Wi Qtr. 2 4-hr lab. Prereq: 701 or Med Micr 701 or equiv course in basic immunology. Not open to students with credit for Med Micr 833. Cross-listed in Medical Microbiology and Immunology.

**880 Seminar in Microbiology G 1-3**

Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

**890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2**

Students will present oral reports and lead discussion on research progress in specific areas of developmental biology.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Microbiology, Molecular Genetics, Plant Biology, and Zoology. This course is graded S/U.

**893 Individual Studies G 3-5**

Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in Plan B master's program and written permission of instructor. Not open to Plan A MS candidates or PhD candidates. Repeatable to a maximum of 10 cr hrs. Outlined by instructor to meet individual student's needs for Plan B library research. This course is graded S/U.

**894 Group Studies G 2-5**

Group work on special topics in microbial or cellular biology.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**999 Research in Microbiology G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Military Science

### Army ROTC

253 Converse Hall, 2121 Tuttle Park Place, 292-6075

The Department of Military Science offers instruction to all Ohio State students in basic soldier skills, leadership, organization of the Army and military history. Additionally, those individuals meeting the requirements as outlined by the Department of Defense may choose to receive a commission in the United States Army, the United States Army Reserve, or the Army National Guard.

Military Science 100- and 200-level courses are open to all students. Military Science 300- and 400-level courses are open to those students who meet the prerequisites as indicated below or receive the permission of the professor of military science. Students taking military science courses for credit and not seeking a commission will attend the classroom portion only. The Department of Military Science offers two programs of instruction leading to a commission as a Second Lieutenant.

The four-year program consists of a basic course and an advanced course. The basic course requires successful completion of Military Science 100- and 200-level courses during the freshman and sophomore years. The advanced course requires successful completion of Military Science 300- and 400-level courses during the junior and senior years. The courses are three credit hours for the basic program and four credit hours for the advanced program with three hours of classroom instruction. There are approximately 20 hours of leadership laboratory, in addition to the classroom instruction each quarter. Additionally, all advanced course students choosing to receive a commission in the United States Army, must attend a six-week summer training camp between their junior and senior years.

No military obligation is incurred for the first two years of the program. Following completion of the basic course, students may enter the advanced course of instruction. Those qualified students wishing to receive a commission must sign an ROTC contract which obligates the student to complete the program of instruction and accept a commission in the U.S. Army, U.S. Army Reserve, or the Army National Guard. Contracted students receive a subsistence allowance of \$100 for each academic month of enrollment, not to exceed \$2,000.

The two-year program is offered for students wishing to receive a commission who transfer from colleges that did not offer ROTC, who are veterans, or students whose academic course load did not permit them to take military science courses during their first two years. Students may qualify for the two-year program in one of several ways. The first is by attending Army ROTC Basic Camp, Camp Challenge. Upon successful completion of camp, the student may enter the advanced course. Attending basic camp does not require the student to continue in the program nor does it incur any military obligation. The second is to receive credit for honorable prior military service of at least one year, as determined by the professor of military science. Additionally, a student may receive credit for two years or more of Junior ROTC at the high school level. After receiving credit for the basic course, the student proceeds with the advanced course as previously described.

#### 102 Military Survival Skills for the Small Unit Leader U 3

An introduction to combat zone survival techniques; use of military survival kits as well as survival under varying climatic and battlefield conditions; includes a one day field training exercise.

Sp Qtr. 2 1-hr cl, 1 2-hr lab.

#### 103 Land Navigation and Map Reading U 3

An introduction to basic military map reading and land navigation skills; conventional map reading skills as well as survival navigation skills for the hiker will be examined.

Au Qtr. 2 1-hr cl, 1 2-hr leadership lab.

#### 111 Introduction to the US Army U 3

An introduction to the US Army and the concept of leadership. Includes "whole life" skills applicable to school, business, or the Army.

Wi, Sp Qtrs. 2 1-hr cl, 1 2-hr lab.

#### 212 Small Unit Actions U 3

Study of selected small unit actions to define leadership in high stress environment and effects of battlefield dynamics.

Wi Qtr. 2 1-hr cl, 1 2-hr leadership lab. 1 required range exercise.

#### 213 Small Unit Leader U 3

Instruction on advanced land navigation techniques, and tactics at the individual, squad, and platoon level; designed to prepare the student for the AROTC Advanced Program.

Au Qtr. 2 1-hr cl, 1 2-hr leadership lab. 1 2-day land navigation exercise.

#### 221 Basic Tactics and Soldier Skills U 3

An introduction to the organization, mission, characteristics, capabilities, and tactics of the infantry squad, platoon, company, and battalion.

Sp Qtr. 2 1-hr cl, 1 2-hr lab.

#### 311 Contemporary Military Subjects U 4

An overview of national defense policy, military history, organization, roles, missions, and branches of the U.S. Army, basic weaponry, and land navigation; designed as an orientation to the AROTC Advanced Program.

Wi Qtr. 3 cl, 2 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 2-day field training exercise. Prereq: MS 312 or permission of the professor of military science.

#### 312 Small Unit Tactics U 4

Study of the organization, mission, characteristics, capabilities and tactics of the infantry squad, platoon, company, and battalion; troop leading procedures, operations orders, offensive, defense, retrograde operations, and patrolling.

Au Qtr. 3 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 4-day field training exercise. Prereq: Basic AROTC program or equiv.

#### 313 Military Leadership and Skills U 4

A study of leadership to include trait theory, motivation theory, and contemporary leadership models; instruction on oral and written communication techniques, and basic military skill qualification subjects.

Sp Qtr. 3 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 4-day field training exercise. Prereq: 311 or permission of professor of military science.

#### 401 Military Operations, Management, and Ethics U 4

Study of army management systems to include equipment management and property accountability; military professionalism and ethics (ethical decision-making process).

Au Qtr. 3 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 2-day field training exercise. Prereq: 311, 312, 313 or permission of professor of military science.

#### 402 Administration and Operations U 4

Study of army administration, including military publications and personnel actions; army correspondence, including military writing style; small unit operations with concentration on platoon operations.

Wi Qtr. 3 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 4-day field training exercise. Prereq: 401 or permission of professor of military science.

#### 403 Military Justice and Officership U 4

Study of military justice to include court system, disciplinary process, and legal obligations/restrictions.

Sp Qtr. 3 1-hr cl, 1 2-hr leadership lab, 3 1-hr physical training lab, 1 4-day field training exercise. Prereq: 402 or written permission of professor of military science.

## Modern Greek

256 Cunz Hall, 1841 Millikin Road, 292-9255

#### 101 Elementary Modern Greek I U 5

Elements of Modern Greek: sound and writing systems; phonology; morphology of noun and verb; written and oral practice.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of instructor. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

#### 102 Elementary Modern Greek II U 5

Further study of morphology and syntax with reading of longer texts; extensive written and oral practice.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

#### 103 Intermediate Modern Greek I U 5

Grammatical review, with attention to variations of morphology and syntax between Demotic and Katharevousa styles; prose reading assignments and written and oral practice.

Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

#### 104 Intermediate Modern Greek II U 5

Assigned reading from Demotic and Katharevousa sources, including newspaper and periodical articles.

Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

#### 241 Culture of Contemporary Greece U 5

A general survey of socio-cultural trends and issues in modern Greece through close analysis of literature and the other arts.

Wi, Sp Qtrs. 5 cl. Not open to students with credit for 341. BER/GEC/LAR course.

**Masterpieces of Near Eastern Literatures in Translation**

See NJH 272.

**293 Individual Studies U 1-3**

Su, Au, Wi, Sp Qtrs. Prereq: 104 or equiv or permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Topics in Modern Greek studies.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**367 Issues in Greek-American Society and Culture U 5**

Exploration of representative features of Greek-American culture and reflection on the social diversity in the United States.

Wi Qtr. 2 2-hr cl. Prereq: English 110 or 111 or equiv, and soph standing. GEC/LAR course.

**371 Modern Greek Literature in Translation U 5**

Review of the Modern Greek literary tradition of the last two centuries through representative works and from a theoretical perspective.

Sp Qtr. 2 2-hr cl. Prereq: Jr or sr standing. BER/GEC/LAR course.

**401 Advanced Modern Greek I U 5**

Extensive reading from literary prose, with practice in conversation and composition.

Wi Qtr. 5 cl. Prereq: 104.

**402 Advanced Modern Greek II U 5**

Reading from prose and poetry, with advanced practice in conversation and composition.

Sp Qtr. 5 cl. Prereq: 401.

**628 Byzantine Greek Prose U G 5**

Reading and analysis of prose texts representative of major developments and trends in Byzantine Greek writing from the 4th to the 15th century.

Au Qtr. 5 cl. Prereq: 402 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**651 Contemporary Greek Prose U G 5**

Reading and analysis of short stories and novels representative of major developments and trends in Greek prose of the 19th and 20th centuries.

Wi Qtr. 5 cl. Prereq: 402.

**652 Contemporary Greek Poetry U G 5**

Reading and analysis of short and longer poems representative of major developments and trends in Greek poetry of the 19th and 20th centuries.

Sp Qtr. 5 cl. Prereq: 402.

**693 Individual Studies U G 1-6**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-6**

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**721 Studies in Modern Greek Literature U G 5**

Advanced study of specific literary periods, figures, and/or topics, involving extensive reading and discussion of appropriate primary and secondary source materials.

Wi, Sp Qtrs. 4-5 cl. Prereq: 5 cr hrs of Modern Greek literature at the 600 level or equiv. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with *distinction*, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.**811 Seminar in Modern Greek Studies G 5**

Intensive, in-depth exploration of a selected topic or issue in Modern Greek literature, criticism, or intellectual culture.

Wi, Sp Qtr. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**998 Research in Modern Greek G 1-10**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**Molecular, Cellular, and Developmental Biology**

2184 Graves Hall, 333 West 10th Avenue, 292-2804

**693 Individual Studies G 2-15**

Individual research and problem solving in the field of molecular, cellular, and developmental biology.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 35 hrs. This course is graded S/U

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**800 Seminar in Molecular, Cellular, and Developmental Biology G 1**

Seminars will be presented by faculty, graduate students, and outside speakers.

Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2**

Students will present oral reports and lead discussion on research progress in specific areas of molecular, cellular, and developmental biology.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Microbiology, Molecular Genetics, Plant Biology, and Zoology.

**999 Research in Molecular, Cellular, and Developmental Biology G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**Molecular Genetics**

984 Biological Sciences Building, 484 West 12th Avenue, 292-8084

**140 Introduction to Genetics U 5**

An introductory course emphasizing applied aspects of genetics, primarily for students outside the College of Biological Sciences.

Wi, Sp Qtrs. 5 cl. Prereq: Biology 101 or 113 or H115. Not open to students with credit for 170 or 201. NS Admis Cond course.

**201+ Perspectives in Human Heredity U 5**

An introduction to the principles of genetics as they apply to humans; emphasis on topics of concern to individuals and society. Fuerst.

Au Qtr. 5 cl. Prereq: Biology 101 or 113 or H115. Not open to students with credit for 140 or 170. BER course. NS Admis Cond course.

**294 Group Studies U 2-5**

Group work in the field of the chosen program.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**433+ Comparative Embryology and Development U 5**

A basic course considering descriptive and experimental work pertaining to developmental processes in unicellular and multicellular animals with emphasis on the vertebrate embryo. Tassava.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: Zoology 201 or equiv, or written permission of instructor. Not open to students with credit for Zoology 433.

**500 General Genetics U G 5**

The principles of genetics, including molecular genetics, transmission genetics of prokaryotes and eukaryotes, developmental and non-chromosomal genetics, and the genetics and evolution of populations.

Su, Au, Sp Qtrs. 5 cl. Prereq: Biology 101 or 113 or H115, plus 5 additional cr hrs in biological sciences, and Chem 232 or 252.

**501 Genetics and Molecular Biology U G 5**

An introduction to the phenomena, concepts, and methods of molecular biology and of genetics at the molecular, cell, organismal, and population levels; for students majoring in biological sciences. Birky.

Wi Qtr. 5 cl. Prereq: Biochem 511 and Math 150. Not open to students with credit for 500.

**502 Cell and Developmental Biology U G 5**

A basic study of eukaryotic cell biology and of developmental processes, especially in animal embryos; for students majoring in biological sciences. Byers, Simcox, and Tassava.

Sp Qtr. 5 cl. Prereq: 501. Not open to students with credit for 433 or Micrbiol 640 or Zoology 433.

**503 Tutorial in Molecular Genetics U 2**

Practice in searching, reading, and analyzing literature in molecular genetics, and in written and oral presentation.

Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: 502. Open to mol gen majors only or by permission of instructor. GEC/LAR course.

**540† General Cell Biology**

Survey of cell structure and function with emphasis on integration of cytological, biochemical, genetical, and developmental perspectives.

**540.01† Lecture U G 4**

Wi Qtr. 4 cl. Prereq: Biology 114 and Chem 252 and 246, or equivs. Not open to students with credit for Micrbiol 640; or to mol gen majors.

**540.02† Laboratory U G 2**

Wi Qtr. 1 4-hr lab. Prereq or concur: 540.01. Not open to students with credit for Micrbiol 640; or to mol gen majors.

**601 Eukaryotic Molecular Genetics Laboratory U G 5**

Current laboratory techniques used in the genetic and molecular analyses of *Saccharomyces cerevisiae* and *Drosophila*. Chang and Simcox.

Wi Qtr. 1 cl, 3 3-hr labs. Prereq: 501 or Biochem 511, or permission of instructor.

**History of Biology**

See Plant Biology 601.

**602 Eukaryotic Cell and Developmental Biology Laboratory U G 5**

Laboratory course emphasizing recent advances in techniques and methods central to cell biology and developmental biology of eukaryotes. Muller, Oakley, and Tassava.

Sp Qtr. 2 cl, 2 4-hr labs. Prereq: 502 or equiv with permission of instructor.

**622 Plant Genetics and Molecular Biology U G 5**

An in-depth survey of classical and molecular genetic systems in plants with emphasis on current research topics. Davis, Scholl, and Verma.

Wi Qtr. 3 cl, 1 2-hr cl. Prereq: 500 or 501, and Biochem 511. Not open to students with credit for 632 or Plnt Bio 622. Cross-listed in Plant Biology.

**640 The Genetical Basis of Evolution U G 5**

The modern theory of evolution and its underlying genetic basis. Fuerst.

Sp Qtr. 5 cl. Prereq: 500.

**650 Analysis and Interpretation of Biological Data I U G 5**

Methods of analyzing biological data including: sampling, descriptive statistics, distributions, group comparisons, statistical inference, one-way and nested analysis of variance and linear regression and correlation. Kornacker.

Au, Sp Qtrs. 1 2-hr lab, 4 cl (optional after 1st wk), 3-5 hrs cptr-assisted instruction. Prereq: Math 150 or equiv, and 15 cr hrs of courses at the 300 level or higher in a dept of agriculture or in biological sciences.

**675 Cell Differentiation in Eukaryotic Microbes U G 3**

Molecular biology of cell differentiation in protozoans and selected algae and fungi. Byers.

Au Qtr. 3 cl. Prereq: 502 or equiv background in cell biology, genetics, and biochem.

**693 Individual Studies U 2-5 G 2-10**

Individual work in the field of the chosen problems.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for undergrad credit and to a maximum of 35 cr hrs for grad credit. This course is graded S/U.

**694 Group Studies U 2-5 G 2-10**

Group work in the field of the chosen program.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for undergrad credit and to a maximum of 35 cr hrs for grad credit.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****700 Systems of Genetic Analysis U G 3**

Analysis of several major systems used in modern experimental genetics including *Drosophila*, yeast, plants, human, and cell culture systems. Birky, Chang, Johnson, Simcox, and Verma.

Au Qtr. 3 cl. Prereq: 501 or equiv.

**701 Molecular Genetics: DNA Transactions U G 3**

Survey of experimental methods of molecular genetics and their application to the elucidation of pathways of DNA replication, mutation, repair, and recombination. Bisaro and Oakley.

Au Qtr. 3 cl. Prereq: 500 and Biochem 511 or Mol Gen 501 or equiv, and 10 additional cr hrs in the biological sciences above the 300 level.

**705 Advances in Cell Biology U G 4**

An advanced study of selected key areas of research in eukaryotic cell biology. Anderson, Johnson, Muller, and Oakley.

Wi Qtr. 4 cl. Prereq: 701 or equiv.

**711† Molecular Evolution U G 3**

Evolution and population genetics as seen at the molecular level: phenomena, concepts, methods of study, and implications for molecular biology and other disciplines. Birky.

Wi Qtr. 3 cl. Prereq: 500 or 501, and 640 or 701 or Plnt Bio 613 or Zoology 420; or equivs; or permission of instructor.

**715 Developmental Genetics U G 4**

A study of the regulation of developmentally significant genes and cellular interactions involved in differentiation and pattern formation in *Drosophila* and metazoans. Tassava and Vaessin.

Sp Qtr. 4 cl. Prereq: 700 and 701.

**Genetics of Animal Populations**

See Animl Sc/Dairy Sc/Pltry Sc 721 and 722.

**770† Molecular Biology of Animal and Plant Viruses U G 3**

An advanced virology course using selected animal and plant viruses as models of eukaryotic gene regulation. Bisaro and Muller.

Sp Qtr. 3 cl. Prereq: Biochem 702 or equiv with permission of instructor.

**781 Eukaryotic Genome: Structure and Expression G 3**

Current research on the structure and expression of genes in higher eukaryotes. Johnson and Burghes.

Au Qtr. 3 cl. Prereq: Biochem 702 or equiv. Not open to students with credit for Biochem 781. Cross-listed in Biochemistry.

**H783 Honors Research U 3-5**

A program of reading and research for each student with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA or BS *with distinction* in mol gen. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**800 Genetic Seminar G 1-3**

Faculty, graduate students, and outside speakers will participate. Fuerst.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**811 Advanced Topics in Molecular Genetics G 3**

An examination of the current research in molecular genetics by selective reading assignments and critical analysis during class discussion periods. Lambowitz, Marzluf, Muller, and Wilkie.

Wi Qtr. 3 cl. Prereq: 611 or 701, or Biochem 611 or 702. Repeatable to a maximum of 6 cr hrs, including cr hrs earned in Biochem 811. Cross-listed in Biochemistry.

**Current Topics in Animal Genetics**

See Animl Sc/Dairy Sc/Pltry Sc 820.

**890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2**

Students will present oral reports and lead discussion on research progress in specific areas of developmental biology.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Microbiology, Molecular Genetics, Plant Biology, and Zoology. This course is graded S/U.

**999 Research in Genetics G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**Music**

110 Weigel Hall, 1866 College Road, 292-6571

Preceding the class sessions of Music 221 and Music 201, placement tests will be given to determine the ability of students in these subjects. See School of Music for details of time and place.

**101 Applied Music for Nonmajors Group Instruction I U 2**

Au, Wi, Sp Qtrs. 2 cl. Open only to non-music majors. VPA Admis Cond courses.

101.01 Piano

101.02 Voice

**102 Applied Music for Non-majors Group Instruction II U 2**

Au, Wi, Sp Qtrs. 2 cl. Open only to non-music majors. VPA Admis Cond courses.

102.01 Piano

102.02 Voice

**110 Introduction to Applied Music U 1**

An elementary applied music course for prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201.

Au, Wi, Sp Qtrs. 1 1/2-hr cl, studio cl and recital attendance arr. Prereq: Audition and approval of the director of the School of Music. Repeatable to a maximum of 2 cr hrs in each decimal subdivision. Does not count toward a music major.

110.11 Piano

110.21 Voice

110.31 Violin

110.32 Viola

110.33 Cello

110.34 Double Bass

110.35 Guitar

110.36 Jazz Bass

110.41 Flute

110.42 Oboe

110.43 Clarinet

110.44 Bass Clarinet

110.45 Saxophone

110.46 Bassoon

110.51 Horn

110.52 Trumpet

110.53 Trombone

110.54 Euphonium

110.55 Tuba

110.71 Percussion

110.91 Harp

**121 Elementary Music Theory and Aural Training U 5**

An introduction to the fundamentals of music, music reading, and aural musicianship.

Au Qtr. 5 cl. Not open for credit to music majors. May not be substituted for 270. VPA Admis Cond course.

**140 Music Cultures of the World U 5**

A survey of musical cultures outside the Western European tradition of the fine arts. Mazo.

Su, Au, Wi, Sp Qtrs. 3 cl, 2 1-hr lab. BER/GEC/LAR course. VPA Admis Cond course.

**141 Introduction to Music U 5**

A consideration of the materials of music and important styles, forms, and composers from the Baroque to the present.

Au, Wi, Sp Qtrs. 5 cl. Not open for credit to music majors. A musical background is not required. BER/GEC/LAR course. VPA Admis Cond course.

**170 Orientation to Music Education U 1**

Overview of career options in music education; includes clinical/field observation in a variety of settings.

Sp Qtr. 1 cl, 1 2-hr lab. Prereq: Enrollment in School of Music.

**Campus Music Organizations**

*University campus music organizations are open to all students in the University who may receive full credit according to regulations of the college in which they are enrolled.*

**180 University Chorus U 1**

Oratorio and large choral works are studied and performed. Major.

Au, Wi, Sp Qtrs. 3 or more hrs rehearsal each wk. Prereq: Admission by audition only. Repeatable to a maximum of 12 cr hrs. VPA Admis Cond course.

**181 Symphonic Choir U 1**

Symphonic Choir is a concert organization singing a variety of literature. Gallagher.

Au, Wi, Sp Qtrs. 6 or more hrs rehearsal each wk. Prereq: Admission by audition only. Repeatable to a maximum of 12 cr hrs. VPA Admis Cond course.

**182 Women's Glee Club U 1**

Study and performance of choral literature for women's voices. Apffelstadt.

Au, Wi, Sp Qtrs. 3 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 12 cr hrs. Membership in this concert group is open to all women students in the University by audition. VPA Admis Cond course.

**183 Men's Glee Club U 1**

Study and performance of choral literature for men's voices. Gallagher.

Au, Wi, Sp Qtrs. 3 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 12 cr hrs. Membership in this concert group is open to all men students in the University by audition only.

**184 University Symphony Orchestra U 1**

The University Orchestra is an 85-piece orchestra of full instrumentation devoted to the preparation of standard and modern literature; the group gives at least three concerts each year. Haddock.

Au, Wi, Sp Qtrs. 6 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 12 cr hrs. Membership is open to all University students by audition. VPA Admis Cond course.

**186 University Football Marching Band U 2**

The University Football Marching Band is a selected group of brass and percussion players which performs at football games and rallies during Autumn Quarter. Woods.

Au Qtr. 6 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 10 cr hrs. No audit. VPA Admis Cond course.

**188 University Bands U 1**

VPA Admis Cond courses.

**188.01 University Wind Ensemble**

A select group of wind and percussion performers who prepare and perform wind literature from the 18th through the 20th century. Kirchhoff.

Prereq: Admission by audition and permission of conductor. Repeatable to a maximum of 12 cr hrs.

**188.02 University Concert Band**

Preparation and performance of traditional and contemporary literature for symphonic band. Kirchhoff.

Open to all students by audition and permission of conductor. Repeatable to a maximum of 12 cr hrs.

**188.03 University Symphonic Band**

Preparation and performance of traditional and contemporary literature for symphonic band. Blatti.

Open to all students by audition and permission of conductor. Repeatable to a maximum of 12 cr hrs.

**188.04 University Band**

Offers the nonmusic major an opportunity to enjoy creating music with limited performance demands.

Open to all students with prior high school instrumental experience; no formal audition required. Repeatable to a maximum of 12 cr hrs. Instruments are available if needed.

**188.05 Athletic Band U 1**

Athletic band provides spirited music for various sporting events (men's and women's basketball, spring football game, and various sports events), as well as several concerts.

Wi, Sp Qtrs. Open to all students with prior high school instrumental experience, no formal audition required. Repeatable to a maximum of 12 cr hrs. Instruments are available if needed.

**191 Chorale U 1**

A selected group of mixed voices which performs an extensive repertoire in concerts both on and off campus. Apfelstadt.

Au, Wi, Sp Qtrs. 6 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. Repeatable to a maximum of 12 cr hrs. VPA Admis Cond course.

**195 University Percussion Ensemble U 1**

A laboratory and performance musical ensemble whose literature consists of original and transcribed works for percussion instruments alone or with percussion as a dominant feature.

Au, Wi, Sp Qtrs. 2 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. VPA Admis Cond course.

**196 Jazz Ensembles U 1**

VPA Admis Cond courses.

**196.01 University**

A selected group devoted to playing, arranging, and rehearsing with emphasis on contemporary jazz literature. McDaniel.

Au, Wi, Sp Qtrs. 4 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**196.02 Laboratory**

A selected group devoted to the study and performance of music in various styles of jazz. Whitted.

Au, Wi, Sp Qtrs. 3 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**196.04 Combos**

Small groups devoted to the study and performance of music in the various jazz combo styles. Marr.

Au, Wi, Sp Qtrs. 3 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**197 Music Education Laboratory Ensemble U 1**

Laboratory ensembles which provide performance experience on secondary instruments. Gillespie.

Sp Qtr. 2 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 3 cr hrs. VPA Admis Cond course.

**199 Small Ensembles U 1**

Su, Au, Wi, Sp Qtrs. 2 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. Each decimal subdivision repeatable to a maximum of 12 cr hrs. VPA Admis Cond courses.

**199.01 Piano****199.02 Voice****199.03 Strings****199.04 Woodwinds****199.05 Brass****199.07 Percussion****199.10 Miscellaneous****199.11 Piano Accompanying Practicum**

Practical experience on piano accompanying applied to music performance and literature.

**200 Applied Music (Secondary) U 1 or 2**

Fundamental applied music instruction in areas other than a student's major or principal area.

Au, Wi, Sp Qtrs. 1 1/2-hr lesson, studio cl and recital attendance arr. Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

**200.11 Piano****200.12 Jazz Piano****200.13 Organ****200.14 Harpsichord****200.21 Voice****200.31 Violin****200.32 Viola****200.33 Cello****200.34 Double Bass****200.35 Guitar****200.36 Jazz Bass****200.37 Jazz Guitar****200.41 Flute****200.42 Oboe****200.43 Clarinet****200.45 Saxophone****200.46 Bassoon****200.51 Horn****200.52 Trumpet****200.53 Trombone****200.54 Euphonium****200.71 Percussion****200.72 Jazz Percussion****201 Applied Music (Principal) U 1 or 2**

Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl and recital attendance arr. Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 6 qtr hrs. Open only to music majors. Each decimal subdivision repeatable to a maximum of 10 cr hrs. These courses are available for EM credit.

**201.11 Piano****201.12 Jazz Piano****201.14 Harpsichord****201.21 Voice****201.31 Violin****201.32 Viola****201.33 Cello****201.34 Double Bass****201.36 Jazz Bass****201.37 Jazz Guitar****201.41 Flute****201.42 Oboe****201.43 Clarinet****201.45 Saxophone****201.46 Bassoon****201.51 Horn****201.52 Trumpet****201.53 Trombone****201.54 Euphonium****201.55 Tuba****201.71 Percussion****201.72 Jazz Percussion****209 Jazz Improvisation I U 3**

Fundamentals of jazz improvisation; seventh chord structures major, minor, pentatonic and blues scales; jazz patterns and phrasing; analysis and improvisation of blues and II-V progressions. Marr.

Wi Qtr. 3 cl. Prereq: 221 and 224. This course is available for EM credit.

**210 Jazz Improvisation II U 3**

Improvisation techniques utilizing blues and pentatonic scales, elaboration of seventh chord structures; analysis of transcribed solos; improvisation of vertical, horizontal, and combination tunes; exploration of Bebop and post-bop literature. Marr.

Sp Qtr. 3 cl. Prereq: 209. This course is available for EM credit.

**211 Jazz Improvisation III U 3**

Continuation of 210; technique development utilizing fourth patterns; concepts in modal and linear improvisations; increasing emphasis on post-bop literature; extensive practice in playing changes of bebop tunes. Carney.

Au Qtr. 3 cl. Prereq: 210.

**212 Diction for Singers I (Italian) U 2**

Fundamentals of phonetics and sound production as applied to singing in Italian.

Wi Qtr. 3 cl. Prereq: Minimum of 2 cr hrs of applied study in voice or written permission of instructor.

**214 Diction for Singers I (French) U 2**

Fundamentals of phonetics and sound production as applied to singing in French.

Au Qtr. 3 cl. Prereq: Minimum of 6 cr hrs of applied voice or written permission of instructor, and 212.

**221 Music Theory I U 3**

Elements of music and musical notation; analytical concepts and terminology; fundamentals of harmony, part-writing, and melody; extensive practice through written drill and creative projects.

Au, Wi Qtrs. 3 cl. Prereq: Passing of placement tests. This course is available for EM credit.

**222 Music Theory II U 3**

Principles of diatonic harmony, nonchordal melodic elements, and homophonic phrase structures; extensive practice in part-writing, analysis, and creative application.

Wi, Sp Qtrs. 3 cl. Prereq: 221. This course is available for EM credit.

**223 Music Theory III U 3**

Continuation of 222, including diatonic modulation and secondary dominant functions (emphasis on creative projects).

Su, Sp Qtrs. 3 cl. Prereq: 222. This course is available for EM credit.



**224 Aural Training I U 1**

Training in aural musicianship and music reading; practical application through solfege, dictation, and keyboard drill.

Au, Wi Qtrs. 3 lab hrs. This course is available for EM credit.

**225 Aural Training II U 1**

Continued aural training; practical application through solfege, dictation, and keyboard drill.

Wi, Sp Qtrs. 3 lab hrs. Prereq: 224. This course is available for EM credit.

**226 Aural Training III U 1**

A continuation of 225, with attention to harmonic, contrapuntal, and rhythmic problems.

Su, Sp Qtrs. 3 lab hrs. Prereq: 225. This course is available for EM credit.

**231 Jazz Theory U 2**

The forms and compositional techniques of jazz, including chord progression formulas, chord alteration, lead-sheet paraphrasing, counter melody and bass-line construction, and creative application. Marr.

Au Qtr. 2 cl. Prereq: 222 and 225.

**240 Music Listening Studies U 3**

Basic instruction in listening to and recognizing musical procedures and forms.

Wi, Sp Qtrs. 3 cl. Open only to music majors.

**241 Music History I U 3**

The development of music from the earliest times through the 16th century. Atkinson.

Au Qtr. 3 cl, 2 lab hrs. Prereq: 223. BER/LAC course.

**242 Music History II U 3**

The development of music in the 17th and 18th centuries. Rosow.

Wi Qtr. 3 cl, 2 lab hrs. Prereq: 241. BER/LAC course.

**243 Music History III U 3**

The development of music in the 19th and 20th centuries. Atkinson.

Sp Qtr. 3 cl, 2 lab hrs. Prereq: 242. BER/LAC course.

**244 Survey of African and African-Derived Music in the Western World U 3**

An introduction to traditional African music and its role in the history and development of Afro-American music with its concomitant sociopolitical milieu. McDaniel.

Wi Qtr. 3 cl. Not open to students with credit for Black St 244. Cross-listed in Black Studies. BER/LAC course. VPA Admis Cond course.

**261 Applied Music Methods and Materials I U 2**

These courses are available for EM credit.

**261.01 Piano**

Lowder.

Au, Wi, Sp Qtrs. 4 cl. Not open to keyboard majors.

**261.02 Voice**

Woliver.

Au, Wi, Sp Qtrs. 4 cl. Not open to voice majors.

**261.03 Strings**

Gillespie.

Au Qtr. 4 cl.

**261.04 Woodwinds**

Delzell.

Wi Qtr. 4 cl.

**261.05 Brass**

Wi Qtr. 4 cl. Not open to brass majors.

**261.07 Percussion**

Wi, Sp Qtrs. 4 cl.

**261.11 Basic Conducting Laboratory U 2**

Basic conducting skill development emphasizing pulse, rhythm and physical coordination. Blatti and Apfelstadt.

Au, Wi, Sp Qtrs. 4 cl.

**262 Applied Music Methods and Materials II U 2**

Prereq: 261 or equiv. These courses are available for EM credit.

**262.01 Piano**

Au, Wi, Sp Qtrs. 4 cl. Not open to keyboard majors.

**262.02 Voice**

Wi, Sp Qtrs. 4 cl. Not open to voice majors.

**262.03 Strings**

Wi Qtr. 4 cl.

**262.04 Woodwinds**

Sp Qtr. 4 cl.

**262.05 Brass**

Sp Qtr. 4 cl.

**262.11 Conducting (Instrumental)**

Conducting instruction applied to band, orchestra and ensemble literature and performance. Blatti.

Wi, Sp Qtrs. 4 cl.

**262.12 Conducting (Choral)**

Conducting instruction applied to choral literature and performance problems. Gallagher.

Wi Qtr. 4 cl. Prereq: 261.11.

**263 Applied Music Methods and Materials III U 2**

Prereq: 262 or equiv. These courses are available for EM credit.

**263.01 Piano**

Wi, Sp Qtrs. 4 cl.

**263.02 Voice**

Gallagher.

Sp Qtr. 4 cl.

**264 Applied Music Methods and Materials IV U 2**

Prereq: 263 or equiv. These courses are available for EM credit.

**264.01 Piano**

Sp Qtr. 4 cl.

**264.02 Voice**

Gallagher.

Au Qtr. 4 cl.

**268 Instrument Repair U 1**

Development of practical skills in identifying and correcting minor repair problems on band and orchestral instruments and their accessories. Spillman.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 262.04, 262.05, and permission of instructor. Repeatable to a maximum of 2 cr hrs.

**270 Basic Experiences in Music U 4**

Basic and extended experiences in elements of music through singing, listening to music, playing instruments, and reading and creating music.

Au, Wi, Sp Qtrs. 5 cl. Prereq: Soph standing. This course is available for EM credit.

**293 Individual Studies U 1-3****293.01 Composition**

Au, Wi, Sp Qtrs. Prereq: Written permission of division chairperson. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Supervised group studies of special problems.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**312 Opera Performance U 2**

Instruction and experience in preparation for opera performance, including study of operatic literature and coaching of operatic roles. Woliver.

Au, Wi, Sp Qtrs. 4 lab hrs. Prereq: Jr or sr standing and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**3401\* Ethnic Musics in the United States U 5**

Music of ethnic groups—black, native American, Hispanic, and others—as an introduction to varied musical perspectives and a means of understanding American cultural diversity.

Au Qtr. 4 cl, 1-hr lab. Prereq: 140 or 141, and English 110 or 111 or equiv. GEC course.

**3411\* Music in the United States U 5**

Music by American composers and the place of music in American life from colonial times to the present.

Wi Qtr. 4 cl, 1 lab hr. Prereq: English 110 or 111 or equiv, and 141 or permission of instructor. Not open for credit to music majors. BER/GEC/LAR course.

**3421\* Introduction to Opera U 5**

A survey of opera from its beginnings to the present. Main.

Sp Qtr. 4 cl, 1 lab hr. Prereq: English 110 or 111 or equiv, and 141 or permission of instructor. Not open for credit to music majors. BER/GEC/LAR course.

**343\* Symphonic Music U 5**

The development of the symphony and other types of orchestral music. Maas.

Wi Qtr. 4 cl, 1 lab hr. Prereq: English 110 or 111 or equiv, and 141 or permission of instructor. Not open for credit to music majors. BER/GEC/LAR course.

**344†\* Women and Music U 5**

An examination of women as composers, performers, and patrons of music; consideration of music and musicians representing various styles and time periods.

Sp Qtr. 5 cl. Prereq: 141 and English 110 or 111 or equiv.

**346†\* Music of Bach and Handel U 5**

The works and styles of the two most eminent composers of the late Baroque period.

Au Qtr. 4 cl, 1 lab hr. Prereq: English 110 or 111 or equiv, and 141 or permission of instructor. Not open for credit to music majors. BER/GEC/LAR course.

**347†\* Mozart, Haydn, and Beethoven U 5**

The works and styles of the three most eminent composers of the Classic period.

Wi Qtr. 4 cl, 1 lab hr. Prereq: English 110 or 111 or equiv, and 141 or permission of instructor. Not open for credit to music majors. BER/GEC/LAR course.

**349\* 20th-Century Music U 5**

The main trends in music from Debussy to the avant garde.

Sp Qtr. 4 cl, 1 lab hr. Prereq: English 110 or 111 or equiv, and 141 or permission of instructor. Not open for credit for music majors. BER/GEC/LAR course.

**370 Music for Elementary Teachers U 3**

Music literature and teaching aids for children, including singing, rhythmic, creative, and listening experiences, and their presentation.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 270, 271, and professional standing.

**372 Music for Teachers of Young Children U 3**

Instructional materials, methods, and musical skills needed for guiding young children's music and movement learning experiences applied to preschools and kindergarten. Flowers and Rodriguez.

Au Qtr. 2 1½-hr cl. Not open to music majors. Designed for prospective teachers of young children and personnel of preschools and kindergartens.

**373 Music for Special Education Teachers U 3**

Music literature and teaching strategies for exceptional children, including singing, rhythmic, creative, and listening experiences. McCrary.

Wi, Sp Qtrs. 5 cl. Prereq: Jr or sr standing in Ed-Excep.

**401 Applied Music (Principal) U 1 or 2**

Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature.

Au, Wi, Sp Qtrs (except 401.14). 1 1-hr lesson, studio cl and recital attendance arr. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Each decimal subdivision repeatable to a maximum of 8 or hrs.

401.11 Piano

401.12 Jazz Piano

401.14 Harpsichord

401.21 Voice

401.31 Violin

401.32 Viola

401.33 Cello

401.34 Double Bass

401.36 Jazz Bass

401.37 Jazz Guitar

401.41 Flute

401.42 Oboe

401.43 Clarinet

401.44 Bass Clarinet

401.45 Saxophone

401.46 Bassoon

401.51 Horn

401.52 Trumpet

401.53 Trombone

401.54 Euphonium

401.55 Tuba

401.71 Percussion

401.72 Jazz Percussion

401.91 Harp

**402 Applied Music (Major)**

Instruction required in BM curriculum in performance to develop professional qualities of musicianship, technique, and knowledge of music literature.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl and recital attendance arr. Prereq: 201 and written permission of applied area faculty. Each decimal subdivision repeatable to a maximum of 16 or hrs.

402.11 Piano U 2 or 4

402.14 Harpsichord U 2 or 4

402.21 Voice U 3

402.31 Violin U 2 or 4

402.32 Viola U 2 or 4

402.33 Cello U 2 or 4

402.34 Double Bass U 2 or 4

402.41 Flute U 2 or 4

402.42 Oboe U 2 or 4

402.43 Clarinet U 2 or 4

402.44 Bass Clarinet U 2 or 4

402.45 Saxophone U 2 or 4

402.46 Bassoon U 2 or 4

402.51 Horn U 2 or 4

402.52 Trumpet U 2 or 4

402.53 Trombone U 2 or 4

402.54 Euphonium U 2 or 4

402.55 Tuba U 2 or 4

402.71 Percussion U 2 or 4

402.91 Harp U 2 or 4

**412 Diction for Singers II (Italian) U 2**

Advanced study of phonetics and sound production as applied to singing in Italian.

Sp Qtr. 3 cl. Prereq: 212.

**413 Diction for Singers II (German) U 2**

Advanced study of phonetics and sound production as applied to singing in German.

Au Qtr. 3 cl. Prereq: 212 and 213.

**414 Diction for Singers II (French) U 2**

Advanced study of phonetics and sound production as applied to singing in French.

Wi Qtr. 3 cl. Prereq: 212 and 214.

**421 Music Theory IV U 3**

Principles of 18th- and 19th-century chromatic harmony and modulation; extensive practice in part-writing, analysis, and creative application.

Au Qtr. 3 cl. Prereq: 223.

**422 Music Theory V U 3**

Compositional techniques in early 20th-century music; extensive practice through written drill, analysis, and creative projects.

Wi Qtr. 3 cl. Prereq: 421.

**423 Music Theory VI U 3**

Continuation of 422, focusing on more recent developments in 20th-century music (emphasis on creative projects).

Sp Qtr. 3 cl. Prereq: 422.

**424 Aural Training IV U 2**

Intensive training in aural musicianship and music reading; practical application through solfege, dictation, and keyboard drill.

Au Qtr. 4 lab hrs. Prereq: 226. Not open to students with credit for 430.01.

**425 Aural Training V U 2**

A continuation of 424 at a more advanced level.

Wi Qtr. 4 lab hrs. Prereq: 424. Not open to students with credit for 430.02.

**426 Aural Training VI U 2**

A continuation of 425; aural training at an advanced level.

Sp Qtr. 4 lab hrs. Prereq: 425. Not open to students with credit for 430.03.

**427†\* Keyboard Harmony I U 2**

Systematic review and utilization of basic harmonic materials at the keyboard.

Au Qtr. 2 cl. Prereq: 201.01 (6 cr hrs), 261.01, 262.01, and 263.01 (6 cr hrs), or equivalents.

**428†\* Keyboard Harmony II U 2**

Introduction to score reading at the keyboard.

Wi Qtr. 2 cl. Prereq: 427.

**429†\* Keyboard Harmony III U 2**

Continued practical experience in score reading at the keyboard.

Sp Qtr. 2 cl. Prereq: 428.

**433 Scoring for Jazz Ensembles U 3****433.02\* Small Jazz Ensembles**

Scoring projects for jazz combos of various sizes and instrumentation. Marr.

Wi Qtr. 3 cl. Prereq: 223 and 231.

**433.03+ Large Jazz Ensembles**

Scoring projects for the stage band, with concentration on voicing, ranges, doublings, balance, and notational procedures. Marr.

Wi Qtr. 3 cl. Prereq: 433.02. Not open to students with credit for 433.01.

**446\* Survey of Jazz Styles U 3**

Stylistic variants of jazz involving technical and structural aspects so that the student may recognize, play, and score them authentically. McDaniel.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**470 Introduction to Music Education U 4**

Professional orientation for prospective school music teachers; study of musical development, human relations, discipline, evaluation, philosophy of teaching, and the music curriculum; comprehensive field experience. Forsythe.

Au, Wi Qtrs. 2 cl, 2 2-hr labs. Prereq: Soph standing in music educ and Psych 100. Not open to students with credit for 290.

**501 Applied Music (Principal) U 1 or 2**

Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs for each decimal subdivision.

- 501.11 Piano
- 501.14 Harpsichord
- 501.21 Voice
- 501.31 Violin
- 501.32 Viola
- 501.33 Cello
- 501.34 Double Bass
- 501.35 Guitar
- 501.41 Flute
- 501.42 Oboe
- 501.43 Clarinet
- 501.44 Bass Clarinet
- 501.45 Saxophone
- 501.46 Bassoon
- 501.51 Horn
- 501.52 Trumpet
- 501.53 Trombone
- 501.54 Euphonium
- 501.55 Tuba
- 501.71 Percussion
- 501.91 Harp

**502 Applied Music (Major)**

Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl and recital attendance arr. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs for each decimal subdivision.

- 502.11 Piano U 2 or 4
- 502.14 Harpsichord U 2 or 4
- 502.21 Voice U 3
- 502.31 Violin U 2 or 4
- 502.32 Viola U 2 or 4
- 502.33 Cello U 2 or 4
- 502.34 Double Bass U 2 or 4
- 502.41 Flute U 2 or 4
- 502.42 Oboe U 2 or 4
- 502.43 Clarinet U 2 or 4
- 502.44 Bass Clarinet U 2 or 4
- 502.45 Saxophone U 2 or 4
- 502.46 Bassoon U 2 or 4
- 502.51 Horn U 2 or 4
- 502.52 Trumpet U 2 or 4
- 502.53 Trombone U 2 or 4
- 502.54 Euphonium U 2 or 4
- 502.55 Tuba U 2 or 4
- 502.71 Percussion U 2 or 4
- 502.91 Harp U 2 or 4

**510 Advanced Jazz Improvisation U 3**

Advanced techniques of improvisation; the use of modal devices, complex meters, and innovative forms; concern for speed, endurance, energy levels, and problems of unaccompanied performance. Marr.

Sp Qtr. 3 cl. Prereq: 211 or permission of instructor.

**521 Form and Analysis U 3**

Detailed study of the structural principles and forms of homophonic music. Au, Wi, Sp Qtrs. 3 cl. Prereq: 423.

**524 Orchestration I U 3**

A fundamental course in scoring for the instruments of the orchestra and band in transcriptions and arrangements.

Wi Qtr. 3 cl. Prereq: 423.

**531 Counterpoint U 3**

A fundamental course in counterpoint including study of the basic principles of 16th- and 18th-century polyphony.

Au Qtr. 3 cl. Prereq: 423.

**535 Composition I U 3**

A fundamental course in composition, with emphasis on creative writing in the small forms.

Au Qtr. 3 cl. Prereq: 423.

**540 Musics of the World U 5**

Study and analysis of music and its role in non-Western traditions. Mazo.

Au Qtr. 2 2-hr cl, 1 1-hr lab. Prereq: Jr standing in music or permission of instructor.

**565 Marching Band Techniques U 5**

A study of the modern marching band including laboratory work in marching techniques, arranging techniques, and show planning. Woods.

Sp Qtr. 3 1 1/2-hr cl. Not open to freshmen. Open to non-music majors with written permission of instructor.

**566\* Jazz Ensemble Techniques U 3**

The organization and operation of the public school jazz ensemble.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**570 General Music in Elementary Schools: Basic Teaching Practices U 3**

A study of the role of the music teacher in planning musical experiences for children with emphasis on child development and appropriate teaching practices. Flowers.

Wi Qtr. 3 cl, 1 lab hr. Prereq: 571 or permission of instructor.

**571 General Music in Elementary Schools: Music Literature for Children U 3**

Study and analysis of art, folk, ethnic, and popular music literature suitable for children in elementary schools. Flowers.

Au Qtr. 3 cl, 1 lab hr. Prereq: Enrollment in EDP.

**572 General Music in Secondary Schools: Middle and Junior High School General Music U 3**

The role of music in adolescents' general education and the development of competencies essential to teaching. Gerber.

Au, Wi Qtrs. 3 cl, 1 lab hr. Prereq: Enrollment in EDP.

**574 Choral Music in the Schools: Basic Teaching Practices U 3**

Factors relating to organizing and teaching choral music in elementary, middle, and junior high schools. Major.

Au Qtr. 2 cl, 2 lab hrs. Prereq: Enrollment in EDP.

**575 Choral Music in Senior High Schools U 3**

Rehearsal procedures, choral techniques, materials, and literature suited to various choral organizations of senior high schools. Major.

Wi Qtr. 2 cl, 2 lab hrs. Prereq: 574, and enrollment in EDP.

**576 Instrumental Music in Elementary Schools U 3**

The role of instrumental music instruction in public education, techniques of teaching instrumental music, study of music appropriate to musical organizations in elementary schools. Delzell.

Au Qtr. 3 cl, 1 1-hr lab. Prereq: 261.07, 262.03, 262.04, 262.05, 262.11, and enrollment in EDP.

**577 Instrumental Music in Secondary Schools U 3**

The role of instrumental music instruction in public education, techniques of teaching instrumental music, study of music appropriate to musical organizations in secondary schools. Woods.

Wi Qtr. 3 cl, 1 1-hr lab. Prereq: 576 and enrollment in EDP.

**586 Student Teaching in Music in Elementary Schools U 3-8**

Assignment to area elementary schools for observation and teaching experiences with groups of students and cooperating teachers; students attend weekly seminars with University supervisors.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 8 cr hrs.

**587 Student Teaching in Music in Secondary Schools U 3-8**

Assignment to area secondary schools for observation and teaching experiences with groups of students and cooperating teachers; students attend weekly seminars with University supervisors.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 8 cr hrs.

**5911\* Survey of the Music Industry U 3**

Economic aspects of music in America with reference to recordings, films, TV, radio, music theatre, booking, management, publishing, and manufacturing. Dudek.

Wi Qtr. 3 cl. Prereq: Sr-standing or permission of instructor.

**601 Applied Music (Principal) U 1 or 2**

Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: 501 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Each decimal subdivision repeatable to a maximum of 8 cr hrs.

- 601.11 Piano
- 601.14 Harpsichord
- 601.21 Voice
- 601.31 Violin
- 601.32 Viola
- 601.33 Cello
- 601.34 Double Bass
- 601.35 Guitar
- 601.41 Flute
- 601.42 Oboe
- 601.43 Clarinet
- 601.44 Bass Clarinet
- 601.45 Saxophone
- 601.46 Bassoon
- 601.51 Horn
- 601.52 Trumpet
- 601.53 Trombone
- 601.55 Tuba
- 601.71 Percussion
- 601.91 Harp

**602 Applied Music (Major) U G 2 or 4**

Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year.

Au, Wi, Sp Qtrs (except 602.14). 1 1-hr lesson, studio cl arr. Prereq: 502 and written permission of applied area faculty. Each decimal subdivision repeatable to a maximum of 18 cr hrs.

- 602.11 Piano
- 602.14 Harpsichord
- 602.21 Voice
- 602.31 Violin
- 602.32 Viola
- 602.33 Cello
- 602.34 Double Bass
- 602.41 Flute
- 602.42 Oboe
- 602.43 Clarinet
- 602.44 Bass Clarinet
- 602.45 Saxophone
- 602.46 Bassoon
- 602.51 Horn
- 602.52 Trumpet
- 602.53 Trombone
- 602.54 Euphonium
- 602.55 Tuba
- 602.71 Percussion
- 602.91 Harp

**610 Alexander Technique U G 1**

The relationship of kinesthetic perception and the postural reflexes to physical coordination in performance. Conable.

Au, Wi, Sp Qtrs. 2 cl. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**611 Introduction to Piano Pedagogy U G 3**

A critical analysis of various methods and principles of piano instruction, and of literature for the beginning and intermediate performer. Lowder.

Au Qtr. 3 cl. Prereq: 6 cr hrs in 501.01 or 501.11 or permission of instructor.

**612 Piano Pedagogy: Group Instruction U G 3**

Concepts of group piano instruction, techniques for development of keyboard musicianship, and knowledge of appropriate materials. Lowder.

Wi Qtr. 3 cl. Prereq: 6 cr hrs in 501.01 or 501.11 or permission of instructor.

**613 Piano Pedagogy: Practicum U G 3**

To provide supervised experience in piano instruction and guidance in the development of sequences of instruction and in the treatment of specific teaching problems. Lowder.

Sp Qtr. 3 cl. Prereq: 611 or 612 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**615- Structure and Function of the Singing Mechanism U G 3**

The structure and function of the singing and breathing mechanisms as they relate to developmental teaching of voice in the formative years. Peeler.

Au Qtr. 3 cl. Prereq: Permission of instructor.

**620 Survey of Music Analysis Techniques U G 3**

Survey of notation symbology, nomenclature, part-writing practices, and analytic techniques related to Western music composed from the mid-18th through the mid-20th centuries.

Su(1st term), Au Qtrs. 3 cl. Prereq: 423 or equiv. Not open to grad students specializing in music composition or music theory.

**621 Analysis: The Classic Period U G 3**

Comprehensive analysis of representative works from the Classic literature.

Wi Qtr. 3 cl. Prereq: 521 or 620, or a score in the upper third on the grad placement exam.

**622 Analysis: The Romantic Period U G 3**

Comprehensive analysis of representative works from the Romantic literature.

Sp Qtr. 3 cl. Prereq: 521 or 620, or a score in the upper third on the grad placement exam.

**623 Analysis: Post Romantic to Modern Music U G 3**

Comprehensive analysis of representative works from the latter part of the 19th century to the middle of the 20th century.

Au Qtr. 3 cl. Prereq: 521 or 620, or a score in the upper third on the grad placement exam.

**625 Orchestration II U G 3**

Study of 20th-century orchestration techniques, including readings in recent literature on timbre and timbre perception; scoring of transcriptions and students' compositions for various ensembles.

Sp Qtr. 3 cl. Prereq: 524.

**626\* Orchestration III U G 3**

Intensive study of orchestration styles; review of current pedagogical works; emphasis on scoring of students' compositions for various ensembles.

Sp Qtr. 3 cl. Prereq: 625.

**630 Composers Seminar U G 1**

Contemporary topics in composition and theory; presentation and criticism of student compositions and papers.

Au, Wi, Sp Qtrs. 1 1½-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**631 Baroque Counterpoint I. U G 3**

Counterpoint based on the polyphonic style of the 18th century; analysis of representative works and practice in writing two- and three-part inventions.

Wi Qtr. 3 cl. Prereq: 531 or permission of instructor.

**635 Composition II U G 3-5**

Practice in creative writing; analysis, and evaluation; employment of contemporary methods of composition.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 535 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

**636 Introduction to Electronic Music Synthesis U G 3**

Techniques of composition with electronic media; history, literature, and criticism; score preparation; principles of audio engineering; relationships to other communications media. Wells.

Au Qtr. 3 cl. Prereq: 423 and permission of instructor.

**637 Composition with Electronic Media I U G 3-5**

Individual composition projects; further study of sound synthesis techniques, including modification of natural sounds. Wells.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 535, real time electro acoustical modification or equiv and 636. Repeatable to a maximum of 9 cr hrs.

**638\* Audio Recording U G 3**

Audio recording; microphones and microphone placement; multiple-track recording; mixing; equalization and special effects. Ainger.

Au Qtr. 3 cl. Prereq: Elec Eng 201 or equiv with written permission of instructor. Not open to students with credit for Elec Eng 626.

**639\* Audio Recording Laboratory U G 2**

Creating an audio recording; familiarity with the recording studio and console, use and placement of microphones; multiple-track recording equalization and special effects; mixing. Ainger.

Sp Qtr. 1 cl, 1 3-hr lab. Prereq: 638. Not open to students with 6 cr hrs of Elec Eng 627. Repeatable to a maximum of 6 cr hrs.

- 640\* Music in the Middle Ages U G 3**  
The development of western music through the 14th century.  
Au Qtr. 3 cl. Prereq: 243 and 521 or 531. GEC/LAR course.
- 641\* Music in the Renaissance U G 3**  
The development of musical styles from Dufay through Palestrina and Lassus.  
Wi Qtr. 3 cl. Prereq: 243 and 521 or 531. GEC/LAR course.
- 642\* Music in the Baroque Period U G 3**  
The development of musical styles from Monteverdi through Bach. Rosow.  
Sp Qtr. 3 cl. Prereq: 243 and 521 or 531. GEC/LAR course.
- 643\* Music in the Classic Period U G 3**  
Vocal and instrumental music of the middle and late 18th century.  
Au Qtr. 3 cl. Prereq: 243 and 521 or 531. GEC/LAR course.
- 644\* Music in the Romantic Period U G 3**  
The music of the romantic period in Germany and France.  
Wi Qtr. 3 cl. Prereq: 243 and 521 or 531. GEC/LAR course.
- 645\* Modern Music U G 3**  
Major trends in the development of music since 1900.  
Sp Qtr. 3 cl. Prereq: 243 and 521 or 531. GEC/LAR course.
- 646\* History of Music in the United States U G 3**  
A survey of music in the United States from colonial times until the present.  
Au Qtr. 3 cl. Prereq: Jr or sr standing.
- 647\* Individual Composers: Their Lives and Works U G 3**  
A comprehensive study of the works of an individual composer; topic varies from year to year. Mazo.  
Wi Qtr. 3 cl. Prereq: 521 or 531, and 243.
- 648\* Chamber Music Literature U G 3**  
A survey of chamber music of the classic and romantic periods.  
Sp Qtr. 3 cl. Prereq: 243 and 521 or 531.
- 649\* Symphonic Literature U G 3**  
A survey of orchestral music from the classic period to the present.  
Sp Qtr. 3 cl. Prereq: 243 and 521 or 531.
- 650\* Choral Literature U G 3**  
A survey of choral music from the Renaissance to the present.  
Au Qtr. 3 cl. Prereq: 243 and 521 or 531.
- 651\* Opera Literature U G 3**  
A survey of the antecedents of opera and a study of representative works from each of the major periods in the history of opera.  
Wi Qtr. 3 cl. Prereq: 243 and 521 or 531.
- 652 Song Literature U G 3**  
The study of song literature, including historical and philosophical backgrounds selected to meet the needs of the student, artist, or teacher; program building. Rice.  
Au Qtr. 3 cl.
- 653 Piano Literature U G 3**  
A study of the piano sonata and other characteristic forms from the pre-piano period to the present time.  
Sp Qtrs. 3 cl. Prereq: 243 and 521 or 531. Gren.
- 660 Advanced Conducting (Instrumental) U G 3**  
An attempt to develop the power to interpret the larger forms of instrumental literature and to read from full score. Blatti.  
Wi, Sp Qtrs. 3 cl. Prereq: 262.11 and 521.
- 661 Advanced Conducting (Choral) U G 3**  
Development of power to interpret the larger forms of choral literature and to read from full score. Apfelstadt.  
Sp Qtr. 3 cl. Prereq: 262.12 and 521.
- 662 Choral Repertoire U G 2**  
Reading and study of sacred and secular choral literature.  
Su, Wi Qtrs. 1 cl, 1 2-hr lab. Repeatable to a maximum of 6 cr hrs.
- 665 Content and Structure in Arts Education U G 3**  
Students from art, dance, music, and theatre education engage in dialogue, research, and peer teaching focused upon the educational content and structure of each discipline. Gerber.  
Sp Qtr. 1 2 1/2-hr cl. Open only to majors in art, dance, music, and theatre education and to grad students seeking certification. Not open to students with credit for Art Educ 665. Cross-listed in Art Education.
- 669 Music Methods for Elementary Classroom Teachers G 3**  
Analysis and appraisal of the music program in elementary schools; relationship of music to total school program; some emphasis on integrating the arts in education.  
Sp Qtr. 3 2-hr cl. Prereq: 270 or permission of instructor.
- 670\* Medieval, Renaissance, and Baroque Musical Instruments U G 3**  
A study of the early development of musical instruments and their uses; introduction to instrumental techniques and performance practices in these periods. Maas.  
Au Qtr. 3 cl.
- 672 Introduction to Ethnomusicology U G 3**  
General concepts of ethnomusicology applied to the study of different ways in which music has been used outside the Western European tradition of the fine arts. Mazo.  
Wi Qtr. 2 1 1/2-hr cl. Prereq: Jr or sr or grad standing.
- 673\* 19th-Century Russian Music U G 5**  
A study of the development of music in Russia during the 19th century; composers to be considered include Glinka, Musorgsky, Rimsky-Korsakov, Tchaikovsky, and others. Mazo.  
Sp Qtr. 4 cl. Prereq: Jr standing or above. Not open to students with credit for 541.
- 674\* 20th-Century Russian Music U G 5**  
Development of music in Russia from 1900 to present; function of music in Soviet society; composers studied include Scriabin, Stravinsky, Prokofiev, Shostakovich, and current composers. Mazo.  
Sp Qtr. 4 cl, 1 hr arr. Prereq: Jr standing or above. Not open to students with credit for 542.
- 675\* Music of the Russian Folk Tradition U G 3**  
An interdisciplinary study of traditional music of Russian peasants. Mazo.  
Wi Qtr. 2 1 1/2-hr cl. Prereq: Jr or sr or grad standing.
- 679 Music Theory and Composition Senior Project U 2**  
Composition students: preparation of senior composition and half recital of student's compositions; theory students: preparation of senior paper and presentation of paper.  
Su, Au, Wi, Sp Qtrs. Prereq: Admission into music theory and composition major and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.
- 680 Collegium Musicum U G 2**  
Study and performance of music from the medieval, Renaissance, and baroque periods. Maas.  
Au, Wi, Sp Qtrs. 2 hr rehearsal, 1 cl (alternative wks.) Repeatable to a maximum of 12 cr hrs.
- 692 Workshop in Music U G 1-15**  
Concentrated study in an area of music; content of workshop depends on selected emphasis.  
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.
- 693 Individual Studies U G 1-5**  
Individual studies in specified problems in the field of music.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
- 694 Group Studies U G 1-5**  
Supervised group studies of special problems in the field of music.  
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
- 698 Study Tour U G 1-15**  
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.  
Prereq: Permission of instructor. Repeatable for different titled study tours only.
- 698.01 Domestic**  
**698.02 Foreign**
- 701 Applied Music (Non-Major) U G 1 or 2**  
Applied music study with special emphasis on literature and performance practices.  
Au, Wi, Sp Qtrs. 1 1-hr lesson, studio classes arr. Prereq: Placement exam or permission of applied area faculty. Each decimal subdivision repeatable to a maximum of 12 cr hrs.
- 701.11 Piano**  
**701.14 Harpsichord**  
**701.21 Voice**  
**701.31 Violin**  
**701.32 Viola**  
**701.33 Cello**

- 701.34 Double Bass
- 701.41 Flute
- 701.42 Oboe
- 701.43 Clarinet
- 701.44 Bass Clarinet
- 701.45 Saxophone
- 701.46 Bassoon
- 701.51 Horn
- 701.52 Trumpet
- 701.53 Trombone
- 701.54 Euphonium
- 701.55 Tuba
- 701.71 Percussion
- 701.91 Harp

**727 Keyboard Harmony for Graduate Students U G 3**

Application of keyboard musicianship, including sight reading, harmonization of melodies, improvisation, transposition, realization of figured bass and modulation. Lowder.

Su (1st term), 5 cl, Au Qtrs. 3 cl. Prereq: 264.01, 423, or equiv with written permission of instructor.

**732+\* Fugue U G 3**

Detailed study of the fugue; analysis and writing of three- and four-voice fugues.

Sp Qtr. 3 cl. Prereq: 631.

**752 Performance Literature U G 3**

Intensive study of representative literature for the instrument from each style period.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Admission to MM curriculum or permission of instructor. Each decimal subdivision repeatable to a maximum of 6 cr hrs.

**752.01 Piano**

Au, Wi Qtrs.

**752.02 Voice**

Au, Wi, Sp Qtrs.

**752.03 Strings**

Au, Wi, Sp Qtrs.

**752.04\* Woodwinds**

Au, Wi, Sp Qtrs.

**752.05 Brass**

Wi Qtr.

**752.07 Percussion**

Au, Wi, Sp Qtrs.

**756 Improvisation with Orff Instruments U G 3 or 5**

A study of the development of children's musical concepts through improvisation experiences and the use of Orff instruments. Flowers.

Su Qtr. 1 cl, 2 1½-hr labs. Prereq: 570 or equiv with written permission of instructor.

**760 Basic Concepts in Music Education U G 3**

The principles of music education and of the educational and cultural objectives derived from related disciplines which give direction and purpose to the music education program. Gerber and Major.

Su (1st term), Au Qtrs. 3 cl. Prereq: 586 or 587 or equiv.

**761 Principles of Music Learning U G 3**

Analysis of the learning process in music as related to problems of music instruction to the public school. Delzell and McCrary.

Su (1st term), Sp Qtrs. 3 cl. Prereq: 586 or 587 or equiv.

**762\* Principles and Practices in Elementary School Music U G 3**

Analysis and appraisal of the music program in elementary schools including the relationship of music to the total school program. Flowers and Rodriguez.

Sp Qtr. 3 cl. Prereq: 571 or equiv.

**763+\* Literature of Elementary School Music U G 3**

A critical study of folk and art music of various cultures and historic periods for the general vocal and listening activities of the integrated curriculum. Flowers and Rodriguez.

Sp Qtr. 3 cl. Prereq: 571 or equiv.

**764+\* Principles and Practices in Vocal Music Education U G 3**

Analysis and appraisal of the organization, purpose, and development of the vocal music program in secondary schools. Major.

Su (1st term) Qtr. 3 cl. Prereq: 575 or equiv.

**765+\* Literature for Vocal Music Education U G 3**

A study of vocal literature of various cultures and historic periods for use with choral groups in the secondary music program. Gallagher and Major.

Su (1st term) Qtr. 3 cl. Prereq: 575 or equiv.

**766+\* Teaching Practices in General Music U G 3**

Study of current concepts in organizing and teaching general music in the secondary school. Gerber.

Wi Qtr. 3 cl. Prereq: 572 or equiv.

**767\* Teaching Music as a Related Art U G 3**

Study and preparation for teaching music in a multiple arts or humanities context; emphasis on understandings, organization, and techniques essential for interdisciplinary instruction. Gerber.

Wi Qtr. 3 cl. Prereq: Course work or background of study and knowledge of another art form.

**768\* Principles and Practices in Instrumental Music Education U G 3**

Role of instrumental music in the public schools; relationship to society and the total music program, historical development, evaluation, and future trends. Delzell.

Su Qtr (1st term), 3 cl. Prereq: 577 or equiv.

**769+\* Literature for Instrumental Music Education U G 3**

Relationship of teaching materials and performance repertory to education objectives: selection of literature, interpretation, rehearsal procedures, conducting problems, attainment of musical understanding through literature. Woods.

Su (1st term) Qtr. 3 cl. Prereq: 577 or equiv.

**770 Introduction to Research in Music Education U G 3**

A study of methods of research as applied to problems in school music. Delzell, Flowers, and Forsythe.

Su (1st term), Wi Qtrs. 3 cl. Prereq: 586 or 587 or equiv.

**772+\* Music in Early Childhood U G 3-5**

Analysis of research, principles, and practices in early childhood music and application to programs of learning for young children. Flowers.

Au Qtr. 2 1½-hr cl, arr. Prereq: Advanced undergrad standing or above and permission of instructor. For students interested in teaching or research in early childhood music and for experienced personnel in teaching young children.

**773\* Introduction to Music for Exceptional Learners U G 3**

Overview of issues, principles, practices, and research related to the music education of exceptional persons. Flowers.

Au Qtr. 1 2½-hr cl. Prereq: Advanced undergrad standing and permission of instructor.

**774 Directive Teaching in Music U G 3**

Principles and practices of music classroom management; directive teaching emphasizing clarity of objectives, assessment, and systematic instructional procedures for skill and concept teaching. Forsythe.

Sp Qtr. 1 2½-hr cl. Prereq: Advanced undergrad standing and permission of instructor.

**775 Teaching Music for Exceptional Learners U G 3**

An analysis and concentrated study of materials and practices appropriate to teaching music for exceptional learners. Flowers.

Sp Qtr. Prereq: Advanced undergrad standing and permission of instructor.

**777 Practicum in Teaching Music for Handicapped Learners U G 4-10**

Assignment to area schools and institutions for observation and music teaching experiences with groups of handicapped learners and cooperating teachers. Flowers.

Su, Au, Wi, Sp Qtrs. 5-15 hrs per wk in schools or institutions. Prereq: Advanced undergrad standing and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**780 Ensembles U G 1-2**

Study and performance of literature determined by student's participation in a specific ensemble.

3 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. Repeatable to a maximum of 12 cr hrs.

**780.01 Choral**

Su, Au, Wi, Sp Qtrs.

**780.02 Orchestral**

Haddock.

Au, Wi, Sp Qtrs.

**780.03 Band**

Au, Wi, Sp Qtrs.

**780.04 Chamber and Small Ensembles**

Woliver.

Au, Wi, Sp Qtrs.

**780.05 Ensembles: Piano Accompanying Practicum**

Au, Wi, Sp Qtrs.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation *with distinction*, which includes faculty adviser and ASC or College of the Arts or College of Education Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**786 Music Research Methods and Bibliography U G 3**

Survey of the methods and materials for conducting research projects in today's interdisciplinary computerized environment. Heck.

Au Qtr. 3 cl. Prereq: 243 and 521 or 531; or grad standing.

**788+ Studies in Russian Music U G 5**

Selected problems in 19th- and 20th-century Russian music. Mazo.

Sp Qtr. 3 cl. Prereq: 541, 542, or permission of instructor; music majors 243 and 521 or 531. Repeatable to a maximum of 15 cr hrs.

**790 Problems in Vocal Music Education U G 1-5**

Study of problems encountered in the teaching and supervising of vocal music.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**791 Problems in Instrumental Music Education U G 1-5**

Study of problems encountered in teaching, supervising, and organization of the instrumental music program.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**792 Choral Problems U G 1-5**

Study of the problems encountered in developing choruses and church choirs. Gallagher and Major.

Su (1st term), Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**801 Applied Music (Principal) G 1, 2, or 4**

Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Each decimal subdivision repeatable to a maximum of 16 cr hrs.

- 801.11 Piano
- 801.21 Voice
- 801.31 Violin
- 801.32 Viola
- 801.33 Cello
- 801.34 Double Bass
- 801.41 Flute
- 801.43 Clarinet
- 801.45 Saxophone
- 801.46 Bassoon
- 801.51 Horn
- 801.52 Trumpet
- 801.53 Trombone
- 801.54 Euphonium
- 801.55 Tuba
- 801.71 Percussion

**802 Applied Music (Major) G 2 or 4**

A specialized and intense study of literature and techniques of performance.

Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: Placement exam. Each decimal subdivision repeatable to a maximum of 16 cr hrs.

- 802.11 Piano
- 802.14 Harpsichord
- 802.21 Voice
- 802.31 Violin
- 802.32 Viola
- 802.33 Cello
- 802.34 Double Bass
- 802.41 Flute
- 802.42 Oboe
- 802.43 Clarinet
- 802.44 Bass Clarinet
- 802.45 Saxophone
- 802.46 Bassoon
- 802.51 Horn
- 802.52 Trumpet
- 802.53 Trombone

**802.55 Tuba****802.71 Percussion****803 Conducting G 4**

A specialized and intense study of conducting techniques.

Au, Wi, Sp Qtrs. 3 cl, 1 1-hr lab. Prereq: Placement exam. Open only to conducting majors in the MM curriculum. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

**803.01 Choral.**

Apfelstadt and Gallagher.

**803.03 Band**

Blatti.

**810 Music Pedagogy G 3**

A critical analysis of various methods, principles, practices, and materials current in teaching applied music.

**810.21 Vocal**

An analysis of the principles and practices current in the teaching of voice. Peeler.

Wi, Sp Qtrs. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in voice.

**810.22 Vocal Practicum**

Observation of applied voice instruction, participation in and discussion of voice teaching, development of teaching skills and fluency of communications. Peeler.

Wi, Sp Qtrs. 2 hrs arr. Prereq: 615. Repeatable to a maximum of 6 cr hrs.

**810.30\* String Instrument**

An analysis of the principles and practices current in the teaching of strings. Gillespie.

Sp Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in string instruments.

**810.40\* Woodwind Instrument**

An analysis of the principles and practices current in the teaching of woodwinds. Weait.

Sp Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in woodwind instruments.

**810.50\* Brass Instrument**

An analysis of the principles and practices current in the teaching of brass instruments. Burkart.

Au Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in brass instruments.

**810.70 Percussion Instruments**

An analysis of principles and practices in the teaching of percussion instruments. Meza

Sp Qtr. 3 cl. Prereq: Music grad standing and a minimum of 6 cr hrs of applied study in percussion instruments, or permission of instructor.

**818+ Theories of Heinrich Schenker G 3**

Musical structural analysis of Schenker as expressed in his own writings; emphasis on his theories rather than on graphing techniques.

Au Qtr. 3 cl. Prereq: 621 or 622 or 623. Not open to students with credit for 728.

**819+ Levels Theory after Schenker G 3**

Concentration on specific concepts of commentators and successors as distinct from Schenker's.

Wi Qtr. 3 cl. Prereq: 818. Not open to students with credit for 729.

**820 Theory Pedagogy G 3**

The teaching of music theory in colleges and secondary schools.

Au Qtr. 3 cl. Prereq: Music grad standing. Not open to students with credit for 711.

**821\* Seminar in Analysis: The Classic Period G 5**

Critical investigation and application of analytical methods appropriate to works from the Classic period.

Au Qtr. 3 cl. Prereq: 621 or permission of instructor.

**822\* Seminar in Analysis: The Romantic Period G 5**

Critical investigation and application of analytical methods appropriate to selected works from the Romantic period.

Wi Qtr. 3 cl. Prereq: 622 or permission of instructor.

**823\* Seminar in Analysis: Post-Romantic to Modern Music G 5**

Critical investigation and application of analytical methods appropriate to selected works from the latter part of the 19th century to the present.

Sp Qtr. 3 cl. Prereq: 623 or permission of instructor.

**824\* Computer Applications in Music Research G 3**

The use of computers for research in music, including style analysis, thematic indexing, manuscript collating, and information retrieval. Blombach.

Wi Qtr. 3 cl. Prereq: 621, 622, or 623, or equiv and written permission of instructor. Not open to students with credit for 720.



**825\* Advanced Computer Applications in Music Research G 3**

The use of advanced computer programming techniques for research in music. Blombach.

Au, Sp Qtrs. 2 cl. Prereq: 824 or equiv with written permission of instructor. Repeatable to a maximum of 6 cr hrs.

**826 Development of Music Theory I G 5**

A study of the principal treatises on music theory before 1400. Green.

Au Qtr. 3 cl.

**827 Development of Music Theory II G 5**

A study of the principal treatises on music theory from 1400 to 1700. Green.

Wi Qtr. 3 cl.

**828 Development of Music Theory III G 5**

Critical study of music and theory texts from 1700 to 1900. Green.

Sp Qtr. 3 cl.

**829\* Contemporary Theories of Music G 5**

Major theoretical viewpoints in contemporary music; fundamental concepts of theory construction and critical examination of contemporary theories.

Sp Qtr. 3 cl. Prereq: Music grad standing.

**831\* Baroque Counterpoint II G 3**

Advanced counterpoint based on the polyphonic style of the 18th century; analysis and stylistic writing, including study of canons and invertible counterpoint.

Sp Qtr. 3 cl. Prereq: 631.

**835 Composition III G 3-5**

Creative writing at an advanced level.

Su, Au, Wi, Sp Qtrs. Prereq: 2 qtrs of 635 or equiv. Repeatable to a maximum of 20 cr hrs.

**837 Composition with Electronic Media II G 3-5**

Advanced composition using electronically generated sound material. Wells.

Su, Au, Wi, Sp Qtrs. 15 cl. Prereq: 637. Repeatable to a maximum of 15 cr hrs.

**838 Seminar in Music Perception G 5**

Investigation and application of experimental techniques for measuring music perception and musical behavior, including a critical survey of recent experimental literature. Butler.

Sp Qtr. 3 1-hr cl. Prereq: Permission of instructor.

**839 Research Practicum in Music Perception G 3**

Supervised research in music perception with review of relevant theoretical and methodological literature. Butler.

Au, Wi, Sp Qtrs. Prereq: 838. Repeatable to a maximum of 6 cr hrs.

**841\* Studies in Medieval Music G 5**

Problems and research in music before 1400. Atkinson.

Au Qtr. 3-5 cl.

**842\* Studies in Renaissance Music G 5**

Problems and research in music between 1400 and 1600.

Wi Qtr. 3-5 cl.

**843\* Studies in Baroque Music G 5**

Problems and research in music between 1600 and 1750. Rosow.

Sp Qtr. 3-5 cl.

**844\* Studies in Classic Music G 5**

Problems and research in music of the late 18th century. Rosow.

Au Qtr. 3-5 cl.

**845\* Studies in Romantic Music G 5**

Problems and research in music of the 19th century.

Wi Qtr. 3-5 cl.

**846\* Studies in Modern Music G 5**

Problems and research in music of the 20th century.

Sp Qtr. 3-5 cl.

**847\* Development of Notation: 900-1600 G 5**

A survey of notational principles from Gregorian neumes through the mensural system of the Renaissance, with exercises in transcription. Atkinson.

Au Qtr. 3 cl. Prereq. or concur: 640.

**848\* Advanced Studies in Notation G 5**

An intensive investigation of the problematic aspects of pre-mensural and mensural notation. Atkinson.

Wi Qtr. 3 cl. Prereq: 847.

**850\* History of Performance Practices G 5**

A study of primary sources pertaining to contemporary attitudes and practices in the performance of music from the Middle Ages to the present. Atkinson.

Wi Qtr. 3 cl.

**851\* Musical Sources and Historiography G 5**

A study of music historiography, supplemented by the examination of musical documents from each of the periods of music history. Rosow.

Sp Qtr. 3 cl. Prereq: 786.

**852 Performance Literature G 3**

Concentrated study of representative literature from each style period.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 752 and admission to DMA program. Repeatable to a maximum of 9 cr hrs.

**852.01 Piano**

Au, Wi, Sp Qtrs.

**852.02 Voice****852.03 Strings****852.04\* Woodwinds**

Au, Wi, Sp Qtrs.

**852.05 Brass**

Wi Qtr.

**854 Seminar: The Development of Music Education G 3 or 5**

The development of music education from the early Greek society to the present day tracing major trends and the influence of certain persons.

Wi Qtr. 3 or 5 cl. Prereq: Written permission of instructor.

**875 Seminar: Psychological Factors in Music Education G 3 or 5**

A study of the psychological factors, theory, and research in the musical development of children and adolescents with implications for school music education programs. Forsythe.

Au Qtr. 3 or 5 cl. Prereq: 761.

**876 Seminar: Evaluation and Measurement in Music Education G 3 or 5**

A study of the theory, principles, and techniques of evaluation and measurement in music education.

Sp Qtr. 3 or 5 cl. Prereq: 761 and Psych 510.

**879 Seminar: Music in Higher Education G 3 or 5**

The role of music in higher education historically and in contemporary times, including its philosophical bases, degree programs, and organizations. Delzell and Gibson.

Sp Qtr. 3 or 5 cl.

**893 Individual Studies G 1-5**

Individual research projects not connected with the dissertation.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 3-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**894.01 Seminar in Music Theory****894.02 Seminar in Music Education**

Flowers and Forsythe.

**902 Applied Music (Major) G 2 or 4**

Advanced study of music literature in performance including concert recital presentation.

Su, Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: Placement exam. Open only to students admitted to DMA program. Each decimal subdivision repeatable to a maximum of 16 cr hrs.

**902.11 Piano****902.21 Voice****902.31 Violin****902.41 Flute****902.42 Oboe****902.43 Clarinet****902.44 Bass Clarinet****902.45 Saxophone****902.46 Bassoon****902.52 Trumpet****902.53 Trombone****902.55 Tuba****995 Advanced Research Practicum G 1-5**

Utilization of research processes and creative techniques appropriate to the field of inquiry—analysis, survey, experimentation, historiography, philosophy. Flowers and Forsythe.

Su, Au, Wi, Sp Qtrs. Prereq: 45 grad cr hrs and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**998 Research in Music: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Music: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## National Security Policy Studies

1478 Pennsylvania Avenue, 292-9701, Mershon Center for Education in National Security

**200 Introduction to National Security Policy U 5**

Survey of policies affecting the security of the United States and of the process by which such policies are formulated, executed, and appraised.

Au, Wi, Sp Qtrs. H200 (honors) may be available to students enrolled in an honors program or by permission of dept.

**Experience of War Interpreted in Classic Examples of Literature**

See Comp Std 308—The Western experience of battle, as seen through the eyes of individual combatants, interpreted in classic examples of the literature of war.

3 cl, 1 3-hr lab. Offered in cooperation with National Security Policy Studies.

**693 Individual Studies in National Security Policy U G 1-5**

A special national security topic is assigned to each student for reading and a report.

Au, Wi, Sp Qtrs. Open only to students with credit in 200 or 702.

**702 Advanced Topics in National Security U G 5**

Examination of various topics in the field of national security; survey of literature in field; identification of major problem areas.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs including credit in History 702. Cross-listed in History. Cross-referenced in Political Science.

**702.01 US-USSR Foreign Policy and Strategic Rivalry**

The politics and diplomacy of nuclear weapons since 1945.

**702.02 International Conflict and Peace**

Introduction to theoretical and empirical literature in the study of conflict and peace.

**702.03 Arms Control**

Examination of the US-Soviet strategic arms competition and the threat of nuclear proliferation.

**702.04 Defense Economics and Weapons System Acquisition**

The role of defense investment in national security and the process of weapons system acquisition.

**702.05 Development of the Military Profession**

The development of the military profession in America from the Revolution to the 1970's.

**702.06 War since 1945**

The conduct and results of conventional war in the post-1945 world.

**702.07 North Atlantic Treaty Organization**

The study of the origins, institutions, and evolution of the North Atlantic Treaty Organization in the broader contexts of West European politics and US-West European relations.

**795 Studies in National Security Policy U G 5**

Strategic intelligence, terrorism, and Soviet defense policy; topic varies.

Prereq: 200 and permission of instructor for undergrads; no prereq for grad students. Repeatable to a maximum of 15 cr hrs.

## Natural Resources

210 Kottman Hall, 2021 Coffey Road, 292-2265

**100 Environmental Science and Management U 4**

Introduction to environmental science, major environmental problems, and related technical and socio-economic issues. Davis and Wali.

Au, Wi Qtrs. 4 cl.

**189 Work Experience in Natural Resources U 3**

The student must secure approval of adviser prior to employment and submit a final written report by fourth week of first quarter of school following the work.

Su, Au, Wi, Sp Qtrs. Equiv of 10 wks employment. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**200 Ecosystem Management U 3**

Use of ecological concepts to evaluate alternative resource management practices in terrestrial and aquatic systems with emphasis on application skills using case studies. Johnson.

Wi, Sp Qtrs. 2 1-hr cl. Prereq: 100 or equiv.

**222 Natural Resources Data Analysis U 5**

Natural resources applications of statistics to land management. Kasile.

Au, Wi, Sp Qtrs. 4 cl, 1 3-hr lab. GEC course.

**289 Natural Resources Practicum U 2**

Experience in the application of principles and techniques of environmental/natural resources problem solving.

Su, Au, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 6 cr hrs. These courses are graded S/U.

**320 Management of Fisheries U 3**

Fisheries resource management problems and programs including biological, economic, and social factors of local, national, and international importance. Johnson.

Au, Wi Qtrs. 3 cl. Prereq or concur: 200.

**321 Principles of Wildlife Management U 3**

Principles of wildlife management as derived from history and ecology. Townsend

Au Qtr. 3 cl. Prereq or concur: 200 and jr standing.

**325+ Principles of Rangeland Management U 3**

Introduction to physical, biological, and social management of rangeland systems.

Sp Qtr. 3 1-hr cl. Prereq or concur: 200.

**340 Concepts of Parks and Recreation U 3**

Examination of parks and recreation concepts including development, rationale, and frameworks for park and recreation systems in the United States. Douglass.

Wi Qtr. 3 cl.

**341 Microcomputer Applications in Natural Resources Management U 5**

Application of microcomputers to the analyses of natural resources data and topics, and the effective conveyance of analyses results. Christensen.

Au, Wi Qtrs. 3 1-hr cl, 2 2-hr lab. Prereq: 222 or Math 151 or permission of instructor.

**355 Water Quality Management U 3**

Causes, consequences, and solutions of pollution in lakes, rivers, wetlands, and groundwater; analysis of the physical, chemical, and biological indicators of water quality.

Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: 100 and 200 or concur.

**367 Environment: The American Experience U 5**

Exploration of the development of perceptions of environment in the United States through study of the writings of key figures in the field. Disinger.

Au, Wi, Sp Qtrs. 2 cl, 3 disc. Prereq: English 110 or 111 or equivs. GEC course.

**400 Natural Resources Policy U 5**

Conceptual and historic development, implementation, and evaluation of resource policy.

Wi, Sp Qtrs. 4 cl, 1 rec. Prereq: 100 and Ag Econ 200 or Econ 200 or equiv. BER/GEC/LAR course.

**498 Study Tour U 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Su, Au, Sp, Wi Qtrs. Prereq: Permission of instructor. Repeatable for different titled study tours only.

**498.01 Domestic****498.02 Foreign****510 Natural History of Ohio U G 5**

Field course emphasizing inter-relationship among physical and biological factors in various ecological settings; field techniques and identification skills used for research paper; teacher section offered. Roth.

Sp Qtr. 2 2 1/2-hr cl and Sat field trip.

**522 Wildlife Identification and Management U G 3**

Characteristics, life histories, and management systems for the major North American game wildlife. Townsend.

Wi Qtr. 2 2-hr cl. Prereq: 321 or equiv.

**523 Management of Wildlife Habitat U G 3**

Principles and practices of ecosystem conservation and manipulation for game, non-game, and endangered wildlife. Townsend.

Wi Qtr. 3 1-hr cl. Prereq: 321 or equiv.

**531 Environmental and Natural Resources Economics U G 5**

Economic analysis of private and public decisions regarding interactions with the natural environment.

Au, Sp Qtrs. 5 cl. Not open to students with credit for Agr Econ 531. Cross-listed in Agricultural Economics.

**540 Principles of Park and Recreation Management U G 5**

Structure and behavior of outdoor recreation land management concepts for public programs at state, regional, and national levels of government. Andrew.

Wi Qtr. 5 cl. Prereq: 200, or equiv with permission of instructor.

**541 Recreation Resources Program Planning U G 5**

Analysis of recreation resources, users, and suppliers in establishing goals, objectives, and actions for recreation programs; scheduling and program budgeting for recreation opportunities. Heywood.

Au Qtr. 6 cl, and 1 1-day field trip. Prereq: 540.

**567 Communicating Environmental and Natural Resources Information U 5**

Concepts, skills development, and practice in accessing and communicating information about the environment and natural resources to varied audiences; emphasis on written and oral communication. Mullins.

Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: Second writing course and 15 cr hrs of nat res course work, or equivs. Not open to students with credit for 410. GEC/LAR course.

**H590 Honors Colloquium U 2**

Instruction in the preparation of research proposals and discussion of current research in natural resources. Christensen.

Wi Qtr. 1 2-hr cl. Prereq: Jr standing in NRE honors program. Required of all NRE honors students. This course is graded S/U.

**Economics of Environmental Quality**

See Econ 591. Offered in cooperation with Economics.

**597 Issues of the Contemporary World U 5**

Prereq: Sr standing. GEC/LAR courses.

**597.02 Antarctic Marine Ecology and Policy U 5**

Historical and contemporary evaluation of Antarctic resource management and its scientific basis.

Sp Qtr. 3 1½-hr cl. Prereq: Sr standing. Not open to students with credit for Int Stds 597.02 or Zoology 597.02. Cross-listed in International Studies and Zoology.

**598 Parks and Recreation Administration Study Tour U 2-5**

Analysis and comparative studies of various park and recreation management programs and policies through on-site visits and interaction with professional managers.

Au, Wi, Sp Qtrs. Arr. Prereq: 541 and jr standing with permission of instructor. Repeatable to a maximum of 10 cr hrs. Travel and subsistence costs will be borne by the student.

**601 Evaluation of Environmental Impact U G 4**

Impact of human activity on natural resources. Disinger.

Au, Wi, Sp Qtrs. 4 1-hr cl. Prereq: Sr or grad standing.

**602† Watershed Resource Evaluation U G 5**

In-depth field study and evaluation of natural resource parameters and management interactions within a small watershed. Disinger.

Wi Qtr. 2 3-hr cl. Prereq: 601 or grad standing.

**606 Natural Resources Management U G 5**

Integration of technical knowledge with social and institutional constraints as they relate to professions in resources management. Douglass.

Au, Wi, Sp Qtr. 5 cl. Prereq: Sr standing in nat res or permission of instructor.

**610 Environmental Interpretation and Visitor Services U G 5**

Principles and practice in communicating with visitors in leisure and non-formal education settings.

Wi Qtr. 5 1-hr cl, 3 independent off-campus site visits and 1 2-day trip. Prereq: 567 or equiv. Not open to students with credit for 511.

**611\* Great Lakes Education Workshop U G 1-4**

Techniques and curricula for presenting interdisciplinary aspects of the oceans and Great Lakes in formal and nonformal education settings. Fortner and Mayer.

Su, Au, Wi, Sp Qtrs. 10 course hrs per cr hr, field trip. Prereq: Teaching certificate or sr standing. Repeatable to a maximum of 5 cr hrs. Offered frequently off-campus on request. Cross-listed with Educational Studies.

**613 Methods for Conservation Education U G 3**

Experience centered course for conservation/natural resources education including objectives, instructional, and evaluative procedures appropriate to formal and non-formal settings. Helgeson and Roth.

Sp Qtr. 1 3-hr cl. Prereq: Sr or grad standing. Not open to students with credit for Ed-Sc&Ma 613. Cross-listed in Education: Science and Mathematics.

**614\* Marine and Aquatic Education U G 3**

Overview of oceanic and Great Lakes resources, their roles in history, climate, commerce, and culture; examination of teaching materials for formal and informal settings.

Su, Wi Qtrs. 1 3-hr cl, field trip. Prereq: 20 cr hrs of social, physical, and/or biological sciences or teacher certification, and permission of instructor. Not open to students with credit for Ed-Sc&Ma 614. Cross-listed with Educational Studies. Travel and subsistence costs for winter field trip must be borne by students. Summer offering at Stone Lab.

**615 Skills for Environmental Communication U G 5**

Skills development and practice in communicating natural resources/environmental information through written and broadcast media. Fortner.

Wi Qtr. 3 2-hr cl. Prereq: 567 or grad standing.

**616 Interpretive Facilities and Programming U G 5**

Interpretive facilities and program planning in leisure and non-formal education setting; case studies and practice in program development and presentation. Mullins.

Sp Qtr. 2 2½-hr cl, 3 half-day and 1 3-day field trips. Prereq: 610 or equiv with permission of instructor or grad status. Not open to students with credit for 518.

**618 Environmental Pollution U G 4**

Problems, principles, causes, and control of pollution in the local, regional, and global environment; quantitative approaches to environmental problems in air, water, and land systems. Mitsch.

Wi Qtr. 4 cl. Prereq: Sr standing and 15 hrs of natural sciences. Not open to students with credit for Civil En 618; Mech Eng 618, or Zoology 618. Cross-listed in Civil Engineering.

**626 Field Techniques in Fisheries Management U G 5**

Methods of sampling, evaluation, and managing freshwater fish populations; techniques are compared and related problems discussed; actual field experience. Johnson.

Au Qtr. 3 cl, 1 4-hr lab 4 overnight field trips. Prereq: 320.

**628 Introduction to Aquaculture U G 5**

An introduction to the physical, biological, and economic factors that influence the development of fish culture systems; current US hatchery practices will be compared with methods used elsewhere in the world. Dabrowski.

Wi Qtr. 3 cl, 4-hrs lab. Prereq: 320.

**633 Advanced Silviculture U G 4**

Continuation of Forestry 321; field-oriented course offering a detailed examination of silvicultural practices and systems for managing selected forest types.

Sp Qtr. 2 cl, 1 3-hr lab, 1 or 2 all-day field trips. Prereq: Forestry 221, 223, and 321, or written permission of instructor.

**634 Aerial Photointerpretation Applications in Natural Resources Management U G 3**

Advanced course in using aerial photointerpretation technology in solving natural resources management and research problems.

Sp Qtr. 1 cl, 2 3-hr labs. Prereq: Forestry 324 or Civil En 603, Civil En 604, or Civil En 605 or permission of instructor.

**635 Forest Resource Policy and Management U G 5**

Integration of planning and decision making processes into the development of a forest resource management plan.

Sp Qtr. 5 cl. Prereq: Forestry 525 or equiv with written permission of instructor.

**642 Park Administration U G 3**

Organization and administration of parks and associated recreation areas and activities. Douglass.

Sp Qtr. 3 cl.

**643 Outdoor Recreation and Tourism by the Private Sector U G 4**

Factors influencing supply and demand for outdoor recreation and tourism facilities provided by the private sector; the feasibility study, liability, insurance, and other managerial concerns. Andrew.

Wi Qtr 4 cl. Prereq: 540 and Econ 200 or equiv.

**644 Park Design U G 5**

Interrelationship of facility design and recreation land management, including various types of parks and criteria for their location and design. Heywood.

Sp Qtr. 6 cl. Prereq: 541.

**647 Wilderness Policy and Management U G 4**

Detailed study of policy processes, planning procedures, designation mechanics, utilization issues, and management programs for wilderness resources. Andrew.

Sp Qtr. 4 cl. Prereq: 421 and 400 or 600 or 540 or equiv with permission of instructor.

**650 Water Resources Institutions and Policies U G 5**

Review and advanced analysis of Ohio, interstate, and federal institutions and policies which influence the use and management of water resources. Vertrees.

Sp Qtr. 2 2-hr, 1 1-hr cl arr. Prereq or concur: 400 and 601 or permission of instructor.

**655† Management of Aquatic Ecosystems U G 3**

Physical, chemical, biological, and systems aspects of management of freshwater ecosystems; pollution of lakes, streams, rivers, and wetlands; quantitative methods for management.

Sp Qtr. 1 3-hr cl. Prereq: 100 or 201 or permission of instructor.

**656 Ecosystems of the World: Temperate, Boreal and High Latitude Ecosystems U G 5**

Intermediate course in ecology emphasizing structure-function relations at broad scales, incorporating soil development, geomorphology, climate, and human impact into analyses of major temperate, boreal, and polar ecosystems. Wali/Boerner.

Sp Qtr. 1 2-hr cl and 2 1½-hr cl. Prereq: Sr or grad standing; Plant Biology 313 or Zoology 313 or equiv; and 20 additional hrs in natural science or natural resources or permission of instructor. Not open to students with credit for Plant Biology 656. Cross-listed in Plant Biology.

**684 Internships in Natural Resources Professions U G 6**

Internship employment for a minimum of three months in natural resources professions arranged with cooperating natural resources or environmental agencies, organizations, or industries.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. These courses are graded S/U.

**690 Workshop in Environmental Education U G 3**

Problems of instruction in environmental education with consideration of both traditional approaches and current developments in content and methodology.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

**691 Workshop in Environmental Management Education U G 1-2**

Identification of environmental problems and management alternatives with emphasis on related education and communications techniques; survey of related research; development of applied educational and communications strategies.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

**693 Individual Studies in Natural Resources U G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. These courses are graded S/U.

**694 Group Studies U G 2-5**

Group studies on the nature and management of natural resources encompassed in one of the following areas.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs for each subdivision.

**700 Natural Resources Policy Analysis U G 5**

Frameworks of planning and analyzing contemporary natural resources policies; instructor and student critiques of legislation, forecasts, plans, and policy analyses. Vertrees

Au Qtr. 2 2½-hr cl. Prereq: 400 with permission of instructor or grad standing.

**725 Wetland Ecology and Management U G 5**

Biological, physical, chemical, and ecological aspects of major wetland ecosystems in North America; valuation, classification, and management of wetlands for biotic resources and water management. Mitsch.

Au Qtr. 1 5-hr cl, field trip. Prereq: Zoology 313 or permission of instructor.

**731\* Ecological Relationships of Forest Stands U G 3**

Ecological and physiological aspects of the forest-soil-site complex as it relates to forest tree establishment and growth. McClenahan, Larson, and Vimmerstedt.

Sp Qtr. 1 cl, 2 hrs arr.

**745 Spatial Analysis in Geographic Information Systems U G 5**

Comprehension, application, and synthesis of those components in digital geographic information systems that involve data manipulation and analysis.

Wi Qtr. 2 1½-hr cl, 1 2-hr computer lab, 1 2-hr outside computer lab. Prereq: Geog 685, and Stat 135 or comparable, or Nat Res 222 and 341, or grad standing, or permission of instructor.

**750 Resolving Social Conflict G 4**

A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflicts. Davis and Epstein.

Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in Business Administration: Interdisciplinary and City and Regional Planning.

**751† Resolving Environmental Disputes G 3**

Framework for evaluating alternative dispute resolution processes in natural resources management.

Wi Qtr. 1 3-hr cl. Prereq: Grad standing, 750; or permission of instructor.

**752 Environmental Science and Law U G 4**

Introduction to the common and statutory law and administration of environmental protection, with special emphasis on scientific and technological aspects.

Au Qtr. 2 2-hr cl. Prereq: Grad or jr or sr standing. Not open for credit applicable to the JD degree. Epstein.

**755 Spatial Analysis of Hydrologic Processes U G 5**

Development and application of spatial analysis procedures, such as digital geographic information systems, to understand the watershed hydrologic system.

Sp Qtr. 2 1½-hr cl; 1 2-hr computer lab; 1 2-hr outside computer lab. Prereq: 745; and Ag&ConSM 370, or Civil En 613, or Geol Sci 204 or 651; and Cptr/Inf 201 or 211 or 221, or Stat 645; or permission of instructor.

**760 Ecosystem Modeling U G 5**

Development and simulation of ecological models for natural resource/ecosystem management; conceptual and symbolic models, simulation techniques on main frame and microcomputers. Mitsch.

Wi Qtr. 5 cl. Arr. Prereq: Math 151 and Zoology 313 or equiv.

**795 Parks and Recreation Research Seminar U G 2**

Presentation, evaluation, and discussion of current parks and recreation research and research needs. Christensen.

Wi Qtr. 1 2-hr cl. Prereq: Grad standing or honors students in parks and recreation administration. Repeatable to a maximum of 4 cr hrs.

**797 Interdepartmental Seminar U G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Repeatable by permission.

Su, Au, Wi, Sp Qtrs.

**798 Current Topics in Environmental Science and Engineering U G 1**

Seminar course which presents current research findings on environmental quality and pollution control.

Au, Sp. Qtr. 1 cl. Prereq: Grad standing in eng, sci, nat res, agr; or permission of instructor. Not available for simultaneous credit as Agronomy 798 or Civil En 798. Repeatable to a maximum of 3 cr hrs. Cross-listed in Agronomy and Civil Engineering.

**800 Integrative Natural Resources Management G 3**

How disciplines within Natural Resources address environmental problems and interact to provide integrative solutions. Cole and Heywood.

Au Qtr. 2 1½-hr cl.

**810 Case Studies and Evaluation of Environmental Communication G 5**

Case studies in effectiveness of environmental communication and practice in evaluation of various communication techniques associated with a current environmental issue. Fortner.

Au Qtr. 1 3-hr cl. Prereq: Grad standing.

**811 Program Development in Environmental Education G 3**

Environmental education theory and program development with application to participant's academic/professional specializations. Roth.

Wi Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**817† Applied Mathematical Ecology G 5**

Application of the method of mathematical ecology to problems of environmental engineering.

Au Qtr. 5 cl. Prereq: Permission of instructor. Not open to students with credit for Civil En 885I or 817. Cross-listed with Civil En 817.

**819 Environmental Interpretive Research and Theory G 5**

Analysis of theoretical basis for environmental resources information and education programming. Mullins.

Sp Qtr. 2 2½-hr cl. Prereq: 511 or equiv with permission of instructor; introductory statistics course; research methods course.

**831 Successional Dynamics of Forests G 3**

Reconstruction of past development of forest stands by analyzing structural, spatial, and growth data; examination of the major processes causing changes over time in forest communities.

Wi Qtr. 1 cl, 1 2-hr lab. Prereq: Grad standing and permission of instructor.

**840\* Policies Relating to Governmental Recreation Areas G 3**

Organizational policies and structures relating to federal, state, and local governmental agencies. Douglass and Heywood.

Wi Qtr. 3 cl. Prereq: 540, and 642 or 643, or 644, or equiv with permission of instructor.

**841\* Outdoor Recreation Behavior G 3**

Analysis of theories related to understanding outdoor recreation behavior of individuals, social groups, and societal aggregations, and implications for managing recreation settings.

Wi Qtr. 2 1½-hr cl. Prereq: Grad standing or permission of instructor.

**861 Geographic Information System Institutions G 4**

Institutional, legal, economic, and social aspects of geographic and land information system development in government and private organizations. Epstein.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing and permission of instructor.

**885† Research Institutions in Natural Resources G 3**

Research in management agencies and the role of the University as the research-providing institution. Cole.

Au Qtr. 3 cl. Prereq: Beginning grad status.

**893 Advanced Individual Studies G 1-5**

Individual studies in selected areas not otherwise offered in natural resources.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Not for use by PhD candidates who have passed the general examination. Not more than 10 hrs of any 693 and/or any 893 will apply toward the master's degree. This course is graded S/U.

**897 Seminar in Natural Resources G 1**

A seminar on current research and practice in natural resources; required of all graduate students in the School of Natural Resources.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Naval Science

110 Converse Hall, 2121 Tuttle Park Place, 292-6015

The sequence of naval science courses is the same for all officer candidate students for the first two academic years. Officer candidate students accepted into the Marine Corps Option will have curriculum variations commencing with their third year. Additionally, some candidates may be required to complete courses in american military affairs, national security policy studies, mathematics, and/or the physical sciences. Descriptions of the course requirements for each candidate classification (scholarship/college programs) may be obtained from the Department of Naval Science. Naval Science courses are open to all students in good standing.

Initial enrollment in the NROTC Program may be completed by scheduling Naval Science 154 during Autumn Quarter registration. Completion of naval science and degree requirements may lead to a commission in the U.S. Navy or the U.S. Marine Corps.

Normal sequence of Naval Science courses is as follows:

<b>First Year:</b>	All candidates—154, 155, 157.
<b>Second Year:</b>	All candidates—261, 262, 263.
<b>Third Year:</b>	Navy candidates—321, 322, 323. Marine candidates—351, 352, 353.
<b>Fourth Year:</b>	Navy candidates 465, 476, 477. Marine candidates—451, 452, 453.

**154 Survey of Naval Science U 3**

An introduction to and survey of disciplines peculiar to naval science including a discussion of naval tasks and missions, regulations, customs, traditions, and organizational relationships.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Enrollment in NROTC Unit or permission of instructor. Students enrolling in this course are to contact the Naval Science Department (292-6015) to receive information about an orientation program.

**155 Naval Ship Systems U 3**

Study of ship design, compartmentation, stability, buoyancy, and damage control.

Wi Qtr. 3 hrs. lec, 1 2-hr lab. Prereq: 154 or written permission of instructor.

**157 Seapower and Maritime Affairs I U 3**

An analysis of seapower and maritime affairs as related to the naval forces of the United States.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 155 or permission of instructor.

**261 Naval Weapons Systems U 3**

Theoretical presentation of fundamental weapons concepts including electromagnetic principles, feedback controls, and basic ballistics.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 156 or permission of instructor.

**262 Naval Weapons and Engineering U 3**

Applications of naval weapons systems utilizing basic principles. The course then transitions to an introduction to ship propulsion systems, ship construction, and fundamental thermodynamic principles.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 261 or permission of instructor.

**263 Naval Ship Systems Engineering U 3**

Study of conventional ship propulsion systems, auxiliary power systems, nuclear power, and new innovations in ship propulsion.

Sp Qtr. 3 hrs lecture, 1 2-hr lab. Prereq: 262 or written permission of instructor.

**321 Introduction to Navigation U 3**

A study of marine navigation, including the determination of position by dead reckoning and electronic methods, and the rules of the nautical road.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 265 or permission of instructor.

**322 Celestial Navigation U 3**

The determination of position by celestial methods of navigation.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 321 or permission of instructor. Not recommended for Astronomy majors.

**323 Naval Operations U 3**

A study of fleet operations, including tactics, the naval communications system, and the principles of relative motion.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 322.

**351\* Evolution of the Art of War, Part I U 3**

A study of the evolution of weapons and tactics, illustrating the principles and variables of war used in certain battles from Alexander through the Prussian influence.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 265 or completion of summer camp.

**352\* Evolution of the Art of War, Part II U 3**

A continuation of the study of evolution of the art of war from the age of Mahan through contemporary problems and military possibilities.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 351.

**353\* Modern Basic Military Strategy and Tactics U 1**

A survey of modern strategical and tactical principles, and current military developments.

Sp Qtr. 1 2-hr sem. Prereq: 352.

**451\* Amphibious Warfare, Part I U 3**

The history of amphibious warfare and its development from the battle of Marathon through the Marshalls Campaign.

Au Qtr. 3 cl, 1 2-hr lab.

**452\* Amphibious Warfare, Part II U 3**

A study of the doctrinal techniques and present concepts of amphibious warfare from the Marianas Campaign through contemporary evolutions.

Wi Qtr. 3 cl, 1 2-hr lab.

**453\* Leadership and the Uniform Code of Military Justice U 1**

Survey of the UCMJ and a study of the psychology of human relationships and techniques of leadership as applied by Marines.

Sp Qtr. 1 2-hr sem.

**465 Principles of Naval Organization and Administration U 2**

Introduction to the structure and principles of naval organization and management.

Au Qtr. 2 cl, 1 2-hr lab. Prereq: 323.

**476 Naval Leadership U 2**

A seminar study of management, leadership, and human relations problems and decisions which confront the junior Naval officer in today's fleet.

Wi Qtr. 2 cl, 1 2-hr lab.

**477 Naval Leadership U 2**

A continuation of 476 with emphasis on problem-solving techniques and solutions.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 476.

## Near Eastern, Judaic, and Hellenic Languages and Literatures

256 Cunz Hall, 1841 Millikin Road, 292-9255

### 271 Sacred Texts of the Near East U 5

An introductory survey of the sacred texts of the Near East: Egyptian and Mesopotamian, the Bible, the Avesta, Hellenistic Gnostic literature, and the Qur'an.

Au Qtr. 5 cl. BER/GEC/LAR course.

### 272 Masterpieces of Near Eastern Literatures in Translation U 5

An introduction to major works of the Arabic, Persian, Turkish, and Modern Greek literary tradition from the sixth century to the present.

Wi Qtr. 5 cl. Taught in English. BER/LAC/LAR course.

### 294 Group Studies U 1-5

Special topics to be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 603 Grammar of Selected Ancient Near Eastern Languages U G 5

Fundamentals of grammar and reading in ancient Near Eastern languages (language of study to be announced, e.g., Egyptian, Coptic, Sumerian, Babylonian, Northwest Semitic dialects, Syriac).

Wi, Sp Qtrs. 5 cl. Prereq: Knowledge of a Semitic language or permission of instructor. Repeatable to a maximum of 20 cr hrs. Taught in English.

### 611 Comparative Semitics U G 5

An introduction to the study of the comparative grammar of the Semitic languages.

Wi Qtr. 5 cl. Prereq: Permission of instructor.

### 630 Introduction to Ugaritic U G 5

Introduction to the language and literature of Ugaritic; readings in the Ugaritic mythological literature.

Sp Qtr. 5 cl. Prereq: Permission of instructor.

### 671 Canon and Communities in the Near East U G 5

Investigation of the process by which Near Eastern sacred texts (Bible, Qur'an, and others) become sacred and the interaction between texts and communities holding them sacred.

Au Qtr. 5 cl.

### 692 Workshop U G 5

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su Qtr. Arr. Prereq: Teaching experience and written permission of workshop director.

### 693 Individual Studies U G 1-5

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in 693.10, 693.20, and 693.30.

### 694 Group Studies U G 1-5

Special topics to be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 792 Interdepartmental Studies in the Humanities U G 3-5

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

### 998 Research in Judaic and Near Eastern Languages and Literatures G 1-10

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

## Neuroscience

### Organ System Physiology

See Physiology 601 and 602.

### Sensory Psychobiology

See Psychology 626.

### Neurobiology

See Zoology 632.

### 693 Individual Studies in Neuroscience G 2-7

Designed to enable the student to pursue a minor investigation in the neuroscience field or laboratory of choice.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 28 cr hrs. This course is graded S/U.

### 724 Structure and Function of the Nervous System I G 6

Interdisciplinary approach to the anatomy, neurobiology, physiology, and biochemistry of the nervous system.

Wi Qtr. 2-4 cl. Prereq: Permission of instructor.

### 725 Structure and Function of the Nervous System II G 7

Continuation of 724; interdisciplinary approach to the anatomy, neurobiology, physiology, and biochemistry of the nervous system.

Sp Qtr. 2-4 cl. Prereq: Permission of instructor.

### 790 Developmental Neurobiology G 3

Interdisciplinary approach to the development of neural cells and the formation and maturation of vertebrate and invertebrate nervous systems.

Au Qtr. 2 1/2-hr cl. Prereq: Neurosci 724 and 725, or permission of instructor. Cross-listed in Cell Biology, Neurobiology, and Anatomy.

### 797 Seminar Topics in Neuroscience G 1 or 2

Selected topics in current neuroscience research.

Su, Au, Wi, Sp Qtrs. 1-2 hr cl. Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 800 Molecular Neurobiology G 3

Survey of recent advances in the understanding of the structure and function of molecules known to be of key importance in the nervous system.

Au Qtr. 3 1-hr cl. Prereq: Permission of instructor.

### Psychopharmacology

See Pharmacology 824.

### Neurochemistry

See Medical Biochemistry 825.

### 911 Advanced Studies in Neuroscience G 3

Su, Au, Wi, Sp Qtrs. Prereq: Physiol 602 or 608, or equiv with written permission of instructor.

#### 911.26 Advanced Topics in Integrative Neurophysiology

In-depth presentation of the theory and concepts of neural networks and microcircuits.

2 1/2-hr cl. Cross-listed in Physiology.

### 999 Research in Neuroscience G 1-15

Research leading to the Phd degree in neuroscience.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing in neurosci and permission of instructor. Repeatable to a maximum of 90 cr hrs. This course is graded S/U.

## Nuclear Engineering

1079 Robinson Laboratory, 206 West 18th Avenue, 292-8519

### 294 Group Studies in Nuclear Engineering U 1-5

Special group studies of a selected area of nuclear engineering not provided in other courses.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

### 505 Introduction to Nuclear Science and Engineering U G 3

Discussion of nuclear energy and nuclear radiation; sources, methods of utilization, and projections for future engineering uses. Blue.

Au, Wi Qtrs. 3 cl. Prereq: Math 255 or 415 and Physics 133, or permission of instructor.

### 605 Reactor Theory I U G 3

Introduction to the concepts of neutron flux, neutron current, fission chain reactions, diffusion theory, criticality of nuclear assemblies, and time dependent behavior. Aldemir.

Au Qtr. 3 cl. Prereq: 505 or equiv, Math 255 and 415 or equiv with permission of instructor. Not open to students with credit for 660.

### 606 Radiological Safety U G 3

General principles of radiation, radioactivity, and protection methodology with emphasis on approved operating, handling, and waste disposal procedures, also regulations and biological interactions. Blue.

Au Qtr. 3 cl, 1 2-hr lab.

**636 Nuclear Power Plants U G 3**

A study of thermal and mechanical design aspects and economics of nuclear power plants and processes. Christensen.

Wi Qtrs. 3 cl. Prereq: 505 and Mech Eng 501 or 309 with permission of instructor. Not open to students with credit for Mech Eng 636. Cross-listed in Mechanical Engineering.

**637 Heat Transfer Applications in Nuclear Reactor Systems U G 3**

The heat transfer applications in nuclear reactor systems include but are not limited to: heat transfer in PWR and BWR fuel rods, coolant, and reactor internals. Christensen.

Sp Qtr. 3 cl. Prereq: 636 or Mech Eng 636, and Mech Eng 510 or 311 with permission of instructor. Not open to students with credit for Mech Eng 637. Cross listed in Mechanical Engineering.

**641 Nuclear Engineering Measurements U G 2**

A theoretical and experimental study of the principles of radiation and reactor measurements. Miller.

Sp Qtr. 1 cl, 1 3-hr lab. Prereq: 505, and Mech Eng 570 or Physics 516 or permission of instructor. Not open for grad cr to students majoring in Nuclear Engineering.

**694 Group Studies in Nuclear Engineering U G 1-5**

Special group studies of a selected area of nuclear engineering not provided in other courses.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**705 Reactor Theory II U G 3**

An analytical and mathematical treatment of multi-energy, multi-dimensional neutron diffusion theory including reactivity, criticality, and rigorous derivation of power reactor kinetics. Aldemir.

Wi Qtr. 3 cl. Prereq: 605.

**707 Numerical Methods in Particle Diffusion, Heat Transfer, and Radiation Transport U G 3**

Computer solutions of neutron diffusion, heat conduction, and radiation transport based on finite difference methods using marching, iterative, and direct solution schemes. Nakamura.

Au Qtr. 2 1 1/2-hr cl. Prereq: 605 or Math 512 or Mech Eng 510, Cptr/Inf 541, and Eng Graph 200. Not open to students with credit for Mech Eng 707 or Nuclear Eng 767. Cross-listed in Mechanical Engineering.

**716 Nuclear Plant Safety U G 3**

Modeling theory developed and applied to nuclear systems to facilitate analysis of possible nuclear accidents; nuclear incidents, accident description criteria for evaluation, nuclear plant siting, and operational procedures. Aldemir.

Sp Qtr. 3 cl. Prereq: 605.

**720 Reactor Dynamics and Control U G 3**

Nuclear reactor and nuclear reactor system operation; control system performance requirements and control mechanisms; automatic control systems and their performance with transient and with steady state operation. Miller.

Sp Qtr. 3 cl. Prereq: 605.

**735 Introduction to Power Plant Operations I G 3**

Introduction to power plant systems, regulatory requirements, and integrated plant operations. Hajek.

Wi Qtr. 2 1 1/2-hr cl. Prereq: 605; 606; Mech Eng 501,

Weld Eng 503, and Mech Eng 510 or Nucl En 636 and 637; 741 or 744, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**739 Knowledge-Based Systems in Engineering U G 3**

Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation. Davis

Wi Qtrs. 2 1 1/2-hr cl. Prereq: Cptr/Inf 630 or permission of instructor. Cross-listed in Computer and Information Science; Chemical, Civil, and Mechanical Engineering.

**741 Nuclear Instrumentation U G 3**

A study of radiation detectors, measuring instruments, block diagrams, and applications to research, nuclear reactors, and measurement systems. Miller.

Au Qtr 2 cl, 1 3-hr lab. Prereq: 505 and 605; Math 415 and Elec Eng 520 or equiv.

**742 Nuclear Radiations and Their Measurement U G 3**

A theoretical and experimental study of nuclear radiation sources, interactions with matter, and detection. Blue.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 605, 606, or permission of instructor.

**743 Nuclear Radiations and Their Shielding U G 3**

A theoretical and experimental study of nuclear radiation, interactions with matter, and shielding. Blue.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 742.

**744 Nuclear Reactor Laboratory U G 3**

An experimental study of nuclear reactor operating characteristics and fundamental concepts of reactor design. Miller.

Su Qtr. 1 cl, 1 4-hr lab. Prereq: 705, 720, and 742.

**745 Introduction to Power Plant Operations II G 2**

Provides experience with integrated plant operations at a nuclear power plant simulator. Hajek.

Sp Qtr. Prereq: 735 or permission of instructor. Repeatable to a maximum of 4 cr hrs.

**751 Nuclear Materials Engineering U G 3**

A theoretical study of microstructural damage mechanisms and response of materials exposed to radiation fields.

Au Qtr. 3 cl. Prereq: 505, 605, and 742.

**766 Nuclear Engineering Design U G 3**

Practice in the analysis and design of nuclear systems and the use of nuclear engineering principles. Christensen.

Au Qtr. 1 cl, 2 2-hr lab. Prereq: 605 and 743.

**776 Nuclear Fuel Cycles U G 3**

A study of the production, utilization, waste disposal, safeguards, and economic aspects of nuclear fuel cycles of importance in nuclear power technology. Bailey.

Au Qtr. 3 cl. Prereq: 505 and 636.

**793 Individual Studies in Nuclear Engineering U G 1-10**

Affords the qualified student the opportunity for independent reading, study, or laboratory work in a specialized field of interest.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**865 Neutron Slowing Down and Thermalization G 3**

Neutron slowing down in infinite and finite media, thermal spectrum calculations, and cell calculations in heterogeneous core lattices.

Sp Qtr. 2 1 1/2-hr cl. Prereq: 605 and Math 512 or equiv with permission of instructor. Not open to students with credit for 765.

**880 Advanced Topics G 1-3**

An advanced course of study for special topics in nuclear engineering; topics will be announced each quarter.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Each subdivision repeatable to a maximum of 12 cr hrs. Offered as demand warrants.

**880.01 Reactor Physics****880.02 Reactor Kinetics****880.03 Reactor Design****880.04 Fuel Management****880.05 Radiation Effects****880.06 Radiation Transport and Shielding****880.08 Nuclear Instrumentation****880.20 Special Topics****881 Nuclear Engineering Seminar G 1**

Current topics in nuclear engineering.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in nuclr en. Repeatable to a maximum of 15 cr hrs.

**894 Group Studies in Nuclear Engineering G 1-5**

Special group studies of a selected area of nuclear engineering not provided in other courses.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**999 Research in Nuclear Engineering G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Nursing

120 Newton Hall, 1585 Neil Avenue, 292-4041

**293 Individual Studies in Nursing U 1-8**

Individual investigation of selected areas in introductory nursing studies.

Su, Au, Wi, Sp Qtrs. Prereq: 1st or 2nd year standing in nursing and written permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

**294 Group Studies in Nursing U 1-5**

Selected topics in Nursing.

Su, Au, Wi, Sp Qtrs. Prereq: 1st or 2nd yr standing in nursing, or permission of instructor. Repeatable to a maximum of 15 cr hrs.



**300 Theoretical Foundations of Professional Nursing U 5**

Theory, process, and discipline of nursing from historical and contemporary perspectives; emphasis on professional role related to concepts of person, health, illness, and environment.

Au Qtr. 5 cl. Prereq: Admission to Nursing. Not open to students with credit for 340, 341, and 342.

**335 Human Developmental Processes: A Nursing Perspective I U 3**

A study of normal biopsychosocial development processes and tasks from conception through adolescence; special emphasis on implications for nursing.

Au Qtr. 3 cl. Prereq: Soph standing; preference given to nursing students. Not open to students with credit for 315 or 316.

**336 Human Developmental Processes: A Nursing Perspective II U 3**

A study of normal biopsychosocial development processes and tasks from young adulthood through late adulthood; special emphasis on implications for nursing.

Wi Qtr. 3 cl. Prereq: Soph standing; preference given to nursing students. Not open to students with credit for 316 or 317.

**355 Nursing Health Assessment U 5**

Study of the techniques used in performing health assessments on individuals throughout the life span; lab opportunities for practice of techniques on healthy young adults.

3 cl, 4-hrs lab. Prereq: Admission to nursing. Not open to students with credit for 350 and 351.

**361 Foundations of Clinical Nursing I U 4**

Process and psychomotor skills fundamental to nursing; emphasis on skills of interpersonal relations, nursing diagnosis, goals, and nurse behaviors related to selected functional health patterns.

Wi Qtr. 2 cl, 2 hrs lab, 6 hrs clinical. Prereq: 300 and 355.

**362 Foundations of Clinical Nursing II U 4**

Process and psychomotor skills fundamental to nursing; emphasis on skills of planning, intervention and evaluation and technique-based nurse behaviors related to selected functional health patterns.

2 cl, 2 hrs lab, 6 hrs clinical. Prereq: 361.

**380 Human Pathophysiologic Processes: A Nursing Perspective U 5**

Study of pathophysiologic processes as a foundation for nursing practice; focus on cellular, organ, and system response to disruptions of body structure and function.

Sp Qtr. 5 cl. Prereq: 300 and Zoology 232 or Physiol 311 and 312.

**390 Introduction to Nursing Research U 3**

An introduction to the research process and its relevance to the advancement of nursing theory and practice.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 300 and an introductory statistics course. Not open to students with credit for 540.

**430 The Childbearing Family U 4**

Au, Wi, Sp Qtrs.

**430.01 Nursing of the Childbearing Family**

Nursing of the childbearing family with primary emphasis on the mother and neonate; consideration is given to individuals experiencing complications of childbearing and reproduction.

4 cl. Prereq: Jr standing in nursing.

**430.02 Practicum in Nursing of the Childbearing Family**

Application of theoretical knowledge and the nursing process to the care of childbearing families, particularly the antepartal, intrapartal, and postpartal woman and the neonate.

12 hrs clinical. Prereq: Jr level standing in nursing. Concur: 430.01 or permission of instructor.

**432 Adults with Acute and Chronic Physical Illnesses I U 4**

Au, Wi, Sp Qtrs.

**432.01 Nursing of Adults with Acute and Chronic Physical Illnesses I**

Nursing knowledge of health and illness care with adults who have acute and chronic physical illnesses.

4 cl. Prereq: Jr standing in nursing.

**432.02 Practicum in Nursing of Adults with Acute and Chronic Physical Illnesses I**

Application of theoretical knowledge and the nursing process to the care of adults with acute or chronic physical illnesses.

12 hrs clinical. Prereq: Jr standing in nursing. Concur: 432.01 or permission of instructor.

**434 Individuals with Mental Illness U 4**

Su, Au, Wi, Sp Qtrs.

**434.01 Nursing of Individuals with Mental Illness**

Nursing knowledge for health promotion and restoration of individuals with mental illness.

4 cl. Prereq: Jr standing in nursing or permission of instructor. Not open to students with credit for 521.01.

**434.02 Practicum in Nursing of Individuals with Mental Illness**

Application of nursing knowledge for health promotion and restoration of individuals with mental illness.

12 hrs clinical. Prereq: 12 hrs clinical. Prereq: Jr standing in nursing. Concur: 434.01 or permission of instructor. Not open to students with credit for 521.02.

**440 Transcultural Nursing U 3**

Concepts and techniques used by nursing in cultural assessments of individuals, families, and communities.

Au, Wi, Sp Qtrs. 3-hr cl. Prereq: Jr level standing in the College of Nursing.

**522 Community Health U 4**

Su, Au, Wi, Sp Qtrs.

**522.01 Community Health Nursing**

Community health nursing knowledge, incorporating concepts of epidemiology, populations, levels of prevention, health promotion, and health care systems.

4 cl. Prereq: Sr standing in nursing.

**522.02 Practicum in Community Health Nursing**

Nursing knowledge of community health incorporating concepts of epidemiology, populations, levels of prevention, health promotion, and health care systems.

12 hrs clinical. Prereq: Sr standing in nursing; concur 522.01 or permission of instructor.

**524 Children and Their Families U 4**

Au, Wi, Sp Qtrs.

**524.01 Nursing Care of Children and Their Families**

Nursing knowledge of infants and children with acute and chronic illnesses and their families; consideration is given to health promotion during childhood.

4 cl. Prereq: Sr standing in nursing. Not open to students with credit for 431.01.

**524.02 Nursing Care of Children and Their Families**

Application of nursing knowledge and nursing process to the care of children and their families; emphasis is on those with acute and chronic illnesses.

12 hrs clinical. Prereq: Sr standing in nursing. Concur: 524.01 or permission of instructor. Not open to students with credit for 431.02.

**526 Adults with Acute and Chronic Physical Illnesses II**

Au, Wi, Sp Qtrs.

**526.01 Nursing Adults with Acute and Chronic Illnesses II U 4**

Nursing knowledge of adults with acute and chronic multiple system physical illnesses; consideration of family, social issues, environmental systems, and continuity of care.

4 cl. Prereq: Sr standing in nursing.

**526.02 Practicum in Nursing Adults with Acute and Chronic Physical Illnesses II U 6**

Application of theoretical knowledge and nursing process to the care and management of adults with multiple physical illnesses; consideration of family and health-care systems.

18 hrs clinical. Prereq: Sr standing in nursing. Concur: 526.01 or permission of instructor.

**530 Contemporary Nursing Practice Issues U 3**

Study of the nurse's role in health care delivery systems and the analysis of contemporary issues affecting the professional nurse and nursing practice.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Sr standing in Nursing.

**H541 Introduction to Nursing Research U 5**

An introductory course in nursing research methods; alternate research designs and data analysis techniques for interested and capable students.

Prereq: Stat 135, 145 or Psych 220 or Sociol 549, jr or sr standing, 3.50 cum pt-hr ratio or above and permission of instructor. Not open to students with credit for 540.

**593 Individual Studies U 1-8**

Study of selected problems in nursing.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 16 or hrs. This course is graded S/U.

**601 Scientific Thought in Nursing U G 3**

Study of the nature of scientific thought, critical thinking and moral reasoning in the discipline of nursing.

Au, Sp Qtrs. 1 3-hr cl. Prereq: Admission to master's program in nursing or permission of instructor.

**602 Theoretical Foundations for Advanced Practice Roles in Nursing U G 3**

The study of theoretical foundations for advanced nursing practice.

Au, Sp Qtrs. 3 cl. Prereq: Admission to master's program in nursing or permission of instructor.

**603 Nursing within the American Health Care System U G 3**

Analysis of American health care delivery system and policy making process with an emphasis on social, political, and economic factors affecting delivery of nursing services.

Sp Qtrs. 1 3-hr cl. Prereq: Admission to master's program in nursing or permission of instructor.

**651 Nursing Process: The Culturally Diverse Client U G 3 or 5**

Study of nursing theory and process with culturally diverse clients; health values, beliefs, and behaviors of selected ethnic/minority groups are examined.

3 cl, or 3 cl and 2-hrs arr. Prereq: Jr, sr, or grad standing in nursing; or permission of instructor.

**652 Nursing Process in the Operating Room U 3**

Study of nursing process with clients in the pre-operative, intra-operative, and post-operative phase; emphasis on scrub nurse and circulating nurse roles.

Au, Wi, Sp Qtrs. 1 cl, 4-hrs clinical. Prereq: Sr standing in nursing and permission of instructor. This course is graded S/U.

**653 Nursing-Child Assessment U G 3**

Study of selected child assessment tools; e.g., sleep/activity record; home observation measurement of environment; nursing child assessment feeding scale; assessment teaching scale.

Sp Qtr. 1 3-hr cl. Prereq: Sr or grad standing in nursing with permission of instructor.

**654 Human Sexuality and Nursing Practice U G 3**

Use of nursing theory and nursing process to study sexual health and aberrations in sexual health across the life span.

Sp Qtr. 3 cl. Prereq: Sr or grad student in Nurs, RN, or permission of instructor.

**694 Group Studies in Nursing U G 2-5**

Group studies of special problems in nursing; topics vary for quarters.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr nursing or grad student. Repeatable to a maximum of 15 cr hrs.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

3 cl. Repeatable to a maximum of 9 cr hrs. Limited to students in allied medical professions, education, law, nursing, medicine, social work, and theology (Columbus seminars).

**700.01 Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.

**700.02 Changing Societal Values U G 3**

Identification and clarification of value considerations as they relate to professional problems in dealing with consumers/clients/patients.

**700.03 Ethical Issues U G 3**

Ethical issues of concern to the professions and arising out of the advanced technology: euthanasia, mind control, malpractice, and social responsibility of the profession.

**700.04 Interprofessional Practicum in Clinical Settings U G 3 or 5**

Interprofessional teamwork in clinical settings.

Arr. Prereq: Permission of instructor.

**700.05\* Interprofessional Seminar in Policy Analysis U G 3**

Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.

3 cl. Prereq: Permission of instructor.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

Prereq: Permission of instructor.

**700.07 Interprofessional Approaches to Child Abuse and Neglect U G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

1 2 1/2-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

**701 Research Methods in Nursing G 3**

Methods of research used in nursing emphasizing quantitative methods, critique of research studies, data management principles and techniques, and practice in computer applications.

Su, Wi Qtrs. 1 2-hr cl, 1 3-hr lab. Prereq: 390 or equiv, concurrent or previous enrollment in required parametric stat course, or permission of instructor

**702 Utilization of Research in Nursing Practice G 3**

Evaluation of current nursing practice with research utilization methods; development of critical analysis of extant research, and evaluation protocols for research based practice.

Au, Sp Qtrs. 1 3-hr cl. Prereq: 701.

**703 Theoretical Perspectives in the Study of Health States I G 4**

Analysis of theories and research regarding health states across the life span with an emphasis on the bio-physiological perspective.

Au Qtr. 2 2-hr cl. Prereq: Admission to master's program in nursing or permission of instructor. Not open to students with credit for 703.01.

**704 Theoretical Perspectives in the Study of Health States II G 4**

Analysis of theories and research regarding health states across the life span with an emphasis on the bio-physiological perspective.

Wi Qtr. 2 2-hr cl. Prereq: 703 or permission of instructor. Not open to students with credit for 704.01.

**705 Advanced Health Assessment G 3**

Enhancement of basic skills in history taking and physical examination; selected abnormalities of neuromuscular, cardiovascular, respiratory, breast, and abdomen are emphasized.

Wi, Sp Qtrs. 1 2-hr cl; 3-hr clinical lab. Prereq: 355 or equiv, and prereq or concur: 704. Not open to students with credit for 703.02 and 704.02.

**706 Pharmacology in Advanced Nursing Practice G 3**

Knowledge necessary for advanced practice nurses for pharmacologic management of well persons and patients through the life span with selected chronic diseases and short-term illnesses.

Su, Wi Qtrs. Independent study. Prereq: Enrollment in nursing graduate program or permission of instructor.

**710 Promotion of Health in Adults G 3**

Theoretical perspectives, research, and systematic analysis of interventions to promote health in well and ill persons throughout the adult years.

Wi Qtr. 1 3-hr cl. Prereq or concur: 701.

**711 Theoretical Foundations of Advanced Nursing Practice G 4**

Analysis of common nursing care problems, environmental influences, and ethical issues related to advanced nursing care of acute and chronically ill adults.

Sp Qtr. 4 cl. Prereq: 705, 710, and prereq or concur: 601, 602, 603, and 702.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Educational Services & Research, Family Relations and Human Development, Human Nutrition, Physical Education, Psychology, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.

Wi Qtr. 1 3-hr cl. Not open to students with credit in 717.01 in any of the cross-listed areas. Limit of 20 students.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su Qtr. 1 2-hr cl. Not open to student with credit in 717.02 in any of the cross-listed areas. Limit of 20 students.

**720 Advanced Parent-Child Nursing I: Issues and Environments G 3**

Concepts and theories related to social policy, ethics, standards of care, and other environmental influences on nursing care of childbearing families and children.

Wi Qtr. 1 3-hr cl. Prereq: Grad standing in nursing or permission of instructor.

**721 Advanced Parent-Child Nursing II: Families and Individuals G 3**

Theories and assessment strategies from nursing, and related sciences relevant to the development of childbearing families and children in various states of health and illness.

Sp Qtr. 1 3-hr cl. Prereq: 720.

**722 Perinatal/Women's Health Nursing: Advanced Reproductive Dynamics G 4**

Application of principles of reproductive physiology, adaptation to menarche, pregnancy, menopause, and relevant health assessment data to advanced nursing practice in perinatal and women's health care.

Sp Qtr. 1 3-hr cl, 1 4-hr lab/clinical. Prereq: 704 and undergrad health assessment course.

**730 Health and Functioning of Older Adults: A Nursing Perspective G 3**

Health-promoting nursing interventions with older adults to reduce adverse risks and improve functioning.

Sp Qtr. 2-hr cl, 1-hr seminar, 3-hrs field work. Prereq: 701 and 710.

**740 Neuroscience Principles and Concepts Relevant to Psychiatric/Mental Health Nursing G 4**

Investigation of neurobiopsychological basis of brain-mind-behavior relationships in mental health and illness, including chemical dependence.

Wi Qtr. 4 hrs lecture/discussion. Prereq: Admission to master's program in nursing or permission of instructor.

**741 Psychological and Sociological Theories Relevant to Psychiatric/Mental Health Nursing G 4**

Survey of psychological and sociological foundations for advanced practice in Psychiatric/Mental Health Nursing.

Au Qtr. 4 hrs lecture/discussion. Prereq: 701; admission to master's program in nursing or permission of instructor.

**742 Issues and Trends in Advanced Psychiatric Nursing G 3**

Historical and philosophical roots of social, legal, ethical, and political forces affecting psychiatric mental health nursing.

Wi Qtr. 3-hr seminar. Prereq: 603.

**743 Advanced Psychiatric Mental Health Nursing: Individuals, Families, and Groups G 4**

Advanced clinical nursing interventions based on an application of principles of neuroscience, psychology, and sociology with persons with severe and persistent mental illness and/or chemical dependence.

Sp Qtr. 4-hr seminar. Prereq: 601, 602, 740, 741; prereq or concur: 702.

**744 Advanced Psychiatric/Mental Health Nursing: Milieu, Case Management, and Managed Care G 4**

Advanced clinical nursing interventions, including managed care, milieu, and case management strategies, for persons with severe and persistent mental illness and/or chemical dependence and their families.

Au Qtr. 4-hr seminar. Prereq: 601, 602, 740, 741; prereq or concur: 702.

**750 Community Health Nursing: Community as Client G 2**

Overview of contemporary community health nursing theory, research, and practice skills necessary to provide nursing care to groups or aggregates within a community health setting.

Au Qtr. 1 2-hr cl. Prereq: Admission to master's program or permission of instructor.

**751 Community Health Nursing: Community Health Agencies G 2**

Study of the organizational structure of community health agencies and the role of the community health nurse specialist within community agencies.

Wi Qtr. 1 2-hr cl every other week; 4 hrs field work. Prereq: 750.

**752 Community Health Nursing: The Larger Social System G 2**

Study of the larger community context in which community health agencies and nurses function.

Sp Qtr. 1 2-hr cl every other week; 4 hrs field work. Prereq: 603 or concur: 751.

**793 Individual Studies in Nursing U G 1-5**

Reading, conferences, and minor investigation by an individual student who wishes to study a particular nursing problem intensively.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

**797 Interdepartmental Seminars U G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Repeatable by permission.

Au, Wi, Sp Qtrs. Repeatable by permission of college secretary.

**810 Advanced Nursing of Adults with Pulmonary Disease G 6**

Examination of biopsychosocial concepts, human responses, advanced nursing assessments, and interventions related to actual and potential health problems in adults experiencing pulmonary illnesses.

Au Qtr. 2 2-hr cl, 9 hrs clinical. Prereq: 711.

**811 Advanced Nursing of Adults with Cardiovascular Illness G 6**

Examination of biopsychosocial concepts, human responses, advanced nursing assessments, and interventions related to actual and potential health problems in adults with cardiovascular alterations.

Wi Qtr. 2 2-hr cl, 9 hrs clinical. Prereq: 711.

**812 Advanced Nursing of Adults with Acute and Chronic Illnesses G 6**

Examination of biopsychosocial concepts, human responses, nursing assessments, and interventions related to actual and potential health problems in adults experiencing acute and chronic illnesses.

Au Qtr. 2 2-hr cl, 9 hrs clinical. Prereq: 711.

**813 Advanced Nursing of Adults with Cancer G 6**

Examination of biopsychosocial concepts, human responses, nursing assessments, and interventions related to prevention, diagnosis, and care of adults experiencing cancer.

Wi Qtr. 2 2-hr cl, 9 hrs clinical. Prereq: 711.

**819 Advanced Adult Health & Illness Nursing Practicum G 6**

Role immersion in the advanced practice of adult health and illness nursing.

Sp Qtr. 1 2-hr cl, 15 hrs clinical. Prereq: 810 and 811, or 812 and 813.

**820 Advanced Perinatal Nursing: Childbearing G 7**

3 cl, 13 hrs clinical.

**820.01 Advanced Perinatal Nursing I: Normal Childbearing**

Nursing of the maternal/fetal dyad during normal childbearing; assessment, nursing therapeutics, and health promotion for the childbearing family.

Au Qtr. Prereq: 601, 602, 701, 703, 721.

**820.02 Advanced Perinatal Nursing II: High Risk Childbearing**

Nursing of maternal/fetal dyads at risk for less than optimal pregnancy outcome; assessment, nursing therapeutics, and health promotion.

Wi Qtr. Prereq: 603, 702, 704, and 820.01.

**821 Advanced Neonatal Nursing G 7**

3 cl, 13-hrs clinical.

**821.01 Advanced High Risk Neonatal Nursing I: Acutely and Seriously Ill Neonates**

Nursing of the acutely/seriously ill neonate; state behavior, acute health problems, congenital anomalies, critical care hospital environments, parent-infant attachment, and legal/ethical issues.

Prereq: 601, 602, 701, 703, and 721.

**821.02 Advanced Neonatal Nursing II: Convalescing Neonates and Chronically Ill Infants**

Nursing of convalescing high risk neonates and chronically ill infants; state behavior; chronic health problems; hospital, transport, and other environments; and parent-infant relationships.

Wi, Qtr. Prereq: 603, 702, 704, and 821.01.

**822 Advanced Nursing of Infants and Children G 7**

3 cl, 13-hrs clinical.

**822.01 Advanced Nursing of Infants and Children I: Health Promotion and Disease Prevention**

Advanced nursing assessment and intervention of children and their families, one month through 18 years; emphasis on child physical and psychosocial health and well-being.

Au Qtr. Prereq: 601, 602, 701, 703, and 721.

**822.02 Advanced Nursing of Infants and Children II: Acute and Chronic Illnesses and Disabilities**

Advanced nursing assessment and intervention of children and their families, one month through 18 years, with emphasis on children with acute and/or chronic illness and disabilities.

Wi Qtr. Prereq: 603, 702, 704, and 822.01.

**829 Advanced Parent-Child Nursing Practicum G 6**

Synthesis of knowledge for application to advanced practice to selected populations using theoretical knowledge, management, teaching, and standards of care.

Sp Qtr. 2 cl, 19-hrs clinical. Prereq: 820.02, 821.02, or 822.02.

**830 Principles of Gerontological Nursing G 5**

Study of aging process and factors that influence health, functional capacity, and nursing care of older adults in the community and in acute and long-term settings.

Su, Wi Qtr. 2-hr cl, 1-hr seminar, 6-hrs field work. Prereq: 702, 704, or permission of instructor.

**831 Advanced Practice with Older Adults: Acute Care G 5**

Didactic and clinical experiences in acute care focused on major illnesses and symptoms of older adults, including discussion of personal control of care and treatment.

Au Qtr. 2-hr cl, 2-hr clinical discussion, 9-hrs clinical. Prereq: 702, 704, 705, and 830.

**832 Advanced Nursing Practice of Older Adults: Long-Term Care G 5**

Didactic and clinical experiences in long-term care settings with age-related problems.

Wi Qtr. 2-hr cl, 2-hr clinical discussion, 9-hrs clinical. Prereq: 702, 704, 705, and 830.

**839 Nursing Management of Older Adults G 5**

Application of core and specialty knowledge and skills in care of older adults. Sp Qtr. 2-hr cl, 2-hr clinical supervision, 16-hrs clinical. Prereq: 602, 603, 831, and 832.

**840 Clinical Practice with Adults: Management of the Acutely Mentally Ill G 4**

Inpatient clinical practicum providing experiences in management of acutely ill psychiatric patients, and role of nurse therapist, milieu, case management, and interdisciplinary team functioning.

Su, Au, Wi, Sp Qtrs. 16-hrs clinical; 2 hrs seminar. Prereq: 603, 743, and prereq or concur: 744.

**841 Clinical Practice with Adults: Community Treatment G 4**

Clinical practicum in a community treatment team; focus on community systems of care, interdisciplinary team, case management, and supervision of case managers.

Su, Au, Wi, Sp Qtrs. 16 hrs clinical; 2 hrs seminar. Prereq: 603, 743, and prereq or concur: 744.

**842 Clinical Practice with Adults: Crisis Intervention G 4**

Clinical practicum in a psychiatric emergency service or crisis stabilization unit; focus on assessment and rapid stabilization of psychiatric crisis.

Su, Au, Wi, Sp Qtrs. 16 hrs clinical; 2 hrs seminar. Prereq: 603, 743, and prereq or concur: 744.

**843 Advanced Nursing Practice in Persons with Chemical Dependence: Tertiary Prevention G 4**

Clinical practicum in a detoxification or rehabilitation setting; emphasis on advanced practice roles of therapist, patient educator, and clinical researcher.

Su, Au, Wi, Sp Qtrs. 16 hrs clinical; 2 hrs seminar. Prereq: 603, 743, and prereq or concur: 744.

**844 Advanced Nursing Practice in Chemical Dependence: Secondary and Tertiary Prevention G 4**

Clinical practicum with individuals with a dual diagnosis; emphasis on advanced staff developer, patient educator, and clinical researcher.

Su, Au, Wi, Sp Qtrs. 16 hrs clinical; 2 hrs seminar. Prereq: 603, 743, prereq or concur: 744.

**845 Advanced Nursing Practice in Chemical Dependence: Primary and Secondary Prevention G 4**

Prevention activities and early case finding relative to chemical dependence; emphasis on advanced practice roles of consultant, patient educator, and researcher.

Su, Au, Wi, Sp Qtrs. 16 hrs clinical; 2 hrs seminar. Prereq: 603, 743, prereq or concur: 744.

**850 Community Health Nursing: Assessment G 2-5**

Study and application of methods used in assessing the health of small groups, aggregates, and communities.

Au Qtr. 2-hr lecture/discussion for all students; 12 hrs field work for students enrolled for 5 cr hrs. Prereq: 601, 602, 702, 752, and Prev Med 800.

**851 Community Health Nursing: Intervention G 2 or 5**

Study and application of methods used in providing nursing interventions to small groups, aggregates, and communities.

Wi Qtr. 2-hr lecture/discussion for all students; 12 hrs field work for students enrolled for 5 cr hrs. Prereq: 850 and 880.

**852 Community Health Nursing: Evaluation G 2 or 5**

Study of strategies and evaluation techniques used by community health agencies/advocates.

Sp Qtr. 2-hr lecture/discussion for all students; 12 hrs field work for students enrolled for 5 cr hrs. Prereq: 851.

**862+ Practicum in Nursing G 2-10**

Supervised experiences which permit in-depth study of the roles and relationships in administration, practice, or teaching of nursing.

Prereq: Permission of instructor.

**862.01+ Administration**

Study of administrative position with opportunity to test theoretical knowledge in a health care system.

2 hr sem; field work.

**862.03+ Nurse Practitioner Practicum**

A preceptor-guided, in-depth study of the role and relationships of the nurse practitioner.

Su Qtr. 4-hr cl (for 2 cr hrs) plus 24 hrs clinical (for an additional 8 cr hrs). Prereq: 819 or 839 or permission of instructor.

**862.05+ Teaching in Nursing G 3-8**

Theories and concepts from Nursing and Education are applied and used in selected Nursing Education experiences.

3 sem; field work. Clinical sites arranged with faculty.

**880 Seminar G 2-5**

Discussion of issues, trends, and problems in nursing; topics to be announced. Repeatable to a maximum of 30 cr hrs.

**894 Group Studies in Nursing G 2-5**

Reading and group conferences for graduate students who desire to study a particular trend in nursing or nursing education.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 5 cr hrs.

**900 Pro Seminar in Nursing G 1**

Examination of current health care problems, national research priorities, issues within nursing science, career patterns of women and doctorally prepared nurses.

Au, Wi, Sp Qtr. 2 cl. Prereq: PhD student in nursing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**901 Theoretical Foundations of Nursing Science G 5**

Study of the major philosophies of nursing from a historical perspective and analysis of methods for theory development in nursing science.

Au Qtr. 5 cl. Prereq: PhD student in nursing, or permission of instructor; prereq or concur: 900.

**902 Quantitative and Qualitative Analysis in Nursing Science**

Study of quantitative and qualitative methodologies used in developing and conducting holistic health research at the individual, family, and community levels of analysis.

**902.01 Qualitative Methods in Nursing Science G 5**

Study of qualitative methods used in conducting nursing research; laboratory experience will include field work; data management and analysis.

Sp Qtr. 3 cl, 4-hrs lab. Prereq: 904 or permission of instructor.

**902.02 Quantitative Methods in Nursing Science G 5**

Study of biobehavioral quantitative methods and measurement strategies used in conducting nursing research; laboratory experiences will include instrument testing, data management, and analysis.

Au Qtr. 3 cl, 4 hrs lab. Prereq: 904, 15 cr hrs of res and stat or permission of instructor.

**902.03 Research Program Development in Nursing G 3**

Study of theoretical, methodological, and analytical approaches building and testing in nursing science, grantsmanship process, and career development of a nurse scientist.

Sp Qtr. 2 cl, 3-hr lab. Prereq: 902.01, 902.02, 905.01, 906.01, 907.01, or permission of instructor.

**903 Theory Synthesis I G 3**

In-depth analysis of health theories from nursing, biological, and behavioral sciences; emphasis on theories derived from a nursing perspective.

Wi Qtr. 3 cl. Prereq: 900, enrollment in PhD program, or permission of instructor.

**904 Theory Synthesis II G 3**

In-depth analysis of selected theories and concepts from the biological and behavioral sciences which have utility for nursing.

Sp Qtr. 3 cl. Prereq: 900, enrollment in PhD program, or permission of instructor.

**905 Studies in Nursing Science at the Individual System Level**

Advanced studies in nursing theory and nursing research about individuals in nursing science.

Prereq: 900 and enrollment in PhD program or permission of instructor.

**905.01 Study in Nursing Science at the Individual System Level G 3**

Study of nursing theory about the individual from a holistic health perspective and development of nursing theory about the individual.

**906 Studies in Nursing Science at the Family System Level G 3**

Advanced studies in family nursing theory and family nursing research in nursing science.

Prereq: 900 and enrollment in PhD program or permission of instructor.

**906.01 Studies in Nursing Science at the Family System Level**

Study of family nursing theory from a holistic health perspective and methods for theory construction about the family system in nursing science.

**907 Studies in Nursing Science at the Community System Level G 3**

Advanced studies in community nursing research in nursing science.

Prereq: 900, enrollment in PhD program or permission of instructor.

**907.01 Studies in Nursing Science at the Community System Level**

Study of community nursing theory from a holistic perspective and methods for theory construction about the community system in nursing science.

Sp Qtr. 3 cl.

**999 Research in Nursing G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

# Occupational Therapy

School of Allied Medical Professions

406 School of Allied Medical Professions Building, 1583 Perry Street, 292-5824

## 435 The Analysis of Human Motion Relative to Occupational Therapy Practice U 4

A study of nerve-muscle-bone structures as these relate to observing, counting, and measuring overt bodily movement. Rybski.

Au, Wi Qtrs. 3 1-hr cl, 1 2-hr lab. Prereq: 540, Anatomy 201, and enrollment in Occupational Therapy Division.

## 450 Practice of Occupational Therapy in Hospital Settings U 5

The development of observational skills through analysis of health care team in a hospital setting. Page.

Wi, Sp Qtrs. 2 1-hr cl, 6 clin hrs. Prereq: 315.

## 451 Directed Practicums U 4

Systematic observation, assessment, and development of treatment plans for selected chronic emotional and physical problems. Page and Rybski.

Au, Wi, Sp Qtrs. 1 cl, 6 clin hrs. Prereq: 435, 450, 451, and 452; concur: 661 or 663. Repeatable to a maximum of 10 cr hrs.

## 452 Interpersonal Dynamics and Task Oriented Groups in Occupational Therapy U 3

Identification, examination, and demonstration of factors that facilitate or hinder small primary group functioning in occupational therapy. Page.

Au Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: Enrollment in Occupational Therapy Division.

## 522 Studies in Psychopathology U 2

A description of selected psychopathic disorders, diagnoses of behavior, psychiatric treatment procedures and their implications for the practice of occupational therapy.

Wi Qtr. 1 cl, 2-hr lab. Prereq: 3 cr hrs of Psych 330, 331, 332, 333, or 530; or permission of instructor.

## 540 Alternative Theoretical Constructs of Occupational Therapy Practice and Professional Issues U 5

Examination of the history, organization, and issues of the profession; examination of alternative theoretical constructs that characterize occupational therapy practice. Grant.

Au, Wi Qtrs. 2 2½-hr cl. Prereq: Enrollment in occ ther.

## 545 Activity Analysis and Media U 2

Activity analysis in relationship to self-care, work, and play. Adamson.

Wi, Sp Qtrs. 2 2-hr labs. Prereq: 315 and 540.

## 546 Applied Media: Dysfunction, Equipment, and Graded Activity U 2

Grading activity and adapting selected activities that have an impact on performance in patients with selected dysfunctions. Adamson.

Au Qtr. 2 2-hr labs. Prereq: 435 and 545.

## 560 Neurodevelopmental Constructs in the Practice of Occupational Therapy U 3

An examination of the neurodevelopmental constructs and their application to the practice of occupational therapy. Wavrek.

Au Qtr. 2 1½-hr cl. Prereq: 435, Alli Med 425, Anatomy 201, and enrollment in Occupational Therapy Division.

## 595 Seminar U 1-3

Conferences, group discussions, and presentations of selected topics.

Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

## 661 Occupational Therapy in Mental Health U 5

The competing theoretical constructs and related intervention techniques for the practice of occupational therapy in the treatment of patients with chronic emotional problems. Page.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 450, 522, and 540.

## 662 Application of the Neurodevelopmental Constructs U 4

Analysis of case studies for deviations that require application of neurodevelopmental assessment techniques to develop treatment plans. Wavrek.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 435, 450, 545, 546, and 560.

## 663 Physical Dysfunction and the Practice of Occupational Therapy U 5

The application of assessment techniques to patients with selected physical dysfunction problems for the development of treatment plans. Rybski.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 435, 450, 540, and 546.

## 664 Advanced Therapeutic Intervention U 3

Principles and methods of evaluation, treatment, and prevention for advanced clinical students.

Au, Wi, Sp Qtrs. 2 cl hr, 1 2-hr lab. Prereq: 560, 661, 662, 663 or equiv with written permission of instructor. Repeatable to a maximum of 6 cr hrs; subdivisions not repeatable.

### 664.01 Psycho-Social Intervention

### 664.03 Rehabilitation Technique

## 667 Occupational Therapy with Young Children U G 3

Overview of pediatric occupational therapy; emphasis on neurophysiological and developmental approaches with young children with developmental disabilities; includes assessment and intervention strategies and family issues. Case-Smith.

Sp Qtr. 2 1½-hr cl. Prereq: 560 and 662; sr standing in occ ther.

## 670 Introduction to Alternative Research Methodologies Used in Occupational Therapy Practice U 3

Historical, theoretical, and descriptive research methodologies applied to the practice of occupational therapy. Case-Smith.

Wi, Sp Qtrs. 2 1½-hr cl. Prereq: 540, 661, and elementary stat.

## 675 Developing Plans for Initiating Occupational Therapy Services U 3

Developing and evaluating plans for introducing occupational therapy practice in selected clinical facilities requiring specialized services.

Wi, Sp Qtrs. 2 1½-hr cl. Prereq: 2nd yr standing in Occupational Therapy Division.

## 685 Field Work in Occupational Therapy

A practical experience in application of the principles and functions of occupational therapy in selected hospitals, health care facilities, and community agencies. Adamson.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Cumulative pt-hr ratio of 2.25 in all professional courses and written permission of division director. Repeatable to a maximum of 18 cr hrs. These courses are graded S/U.

### 685.01 Mental Health U 6

### 685.02 Physical Function U 6

### 685.03 Specialty Area U 2, 4, 6

1, 2 or 3 months, arr with instructor. Repeatable to a maximum of 6 cr hrs.

## 693 Individual Studies U 1-5

Individual reading or research projects by special agreement between instructor and student.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

## 694 Group Studies U G 1-5

Supervised group studies of special topics pertinent to the practice of occupational therapy.

Su, Au, Wi, Sp Qtrs. Open only to students enrolled in Occupational Therapy Division. Repeatable to a maximum of 15 cr hrs.

## 701 Occupational Therapy in Early Intervention G 3

Research/theoretical basis of occupational therapy in early intervention; principles and strategies for working with families; therapy approaches with young children; models of service delivery. Case-Smith.

Wi Qtr. 1 3-hr cl. Prereq: Permission of the instructor.

## 702 Theoretical Approaches in Occupational Therapy with Children G 3

Neurophysiological and sensory integration approaches used in occupational therapy with young children in a variety of settings. Case-Smith.

Sp Qtr. 1 3-hr cl. Prereq: Permission of instructor.

## 793 Individual Studies G 1-5

Guided study with occupational therapy readings, research, and/or experiences selected by the individual and approved by faculty.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

## 795 Seminar G 1-3

Analysis and group discussion of selected topics.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

## 889 Advanced Clinical Practicum in Occupational Therapy G 2-4

Advanced clinical experience in occupational therapy.

Su, Au, Wi, Sp Qtrs. 1-hr cl and clinic hrs arr. Prereq: Permission of instructor and enrollment in AMP grad program. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

### 889.01 Pediatric Area of Specialization

## Ohio State Biochemistry Program

138 Meiling Hall, 370 West 9th Avenue, 292-1463

### 790 Colloquium—Advanced Biochemistry Topics G 1

Seminars presented by Ohio State faculty and by faculty and professionals from outside the University.

Au, Wi, Sp Qtrs. 1 cl. Open only to students in the Ohio State biochemistry program. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 793 Individual Studies G 1-5

A qualified graduate student may conduct a minor laboratory research investigation in biochemistry under the direction of program faculty members.

Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Admission to the OSBP. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 794 Group Studies G 1-5

Designed for students to investigate advanced selected topics in biochemistry.

Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Admission to the OSBP. Repeatable to a maximum of 10 cr hrs.

### 796 Interdisciplinary Seminar in Advanced Biochemistry G 1

Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 15 cr hrs.

### 999 Research in Biochemistry G Arr

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. This course will not serve as a replacement for the 999 course offering within a faculty's academic department. Repeatable. This course is graded S/U.

## Ophthalmology

5024-B University Hospitals Clinic, 456 West 10th Avenue, 293-8159

The faculty of the Department of Ophthalmology is responsible for the instruction in the pathophysiology of the eye and its adnexa as part of the Med II of the medical curriculum. This instruction is offered under the course designation Med Coll 663. The Department also offers clinical instruction in ophthalmology during Med III and Med IV of the Medical Program designated Med Coll 664. This instruction is offered as a clinical elective period of one month. Research electives are available at any time in the curriculum of medical education.

### 999 Research in Ophthalmology G Arr

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Optometry

A 400 Starling-Loving, 338 West 10th Avenue, 292-2647

### 401 Survey of Optometry P 1

Development of optometry and optometric education; scope of optometric services; sources of vision information; kinds of current vision research.

Au Qtr. 1 cl. Prereq: Optomtry 1st yr standing.

### 411 Intermediate Geometric Optics P 5

Thick-lens optics; image evaluation; application to optometric systems.

Wi Qtr. 3 cl, 1 4-hr lab. Prereq: Optomtry 1st yr standing and Phys Opt 501.

### 431 Ophthalmic Optics I P 5

Ophthalmic optics of single-vision and multifocal spectacle lenses; measurement and inspection of spectacle lenses; manufacturing processes.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: Optomtry 2nd yr standing and 411.

### 432 Ophthalmic Optics II P 5

Ophthalmic lens design; minimizing lens aberrations; theory and practice in fitting and adjusting spectacles.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 431.

### 433 Ophthalmic Optics III P 4

The optics of corneal and scleral contact lenses; laboratory exercises in inspecting, measuring, edging, surfacing, and modifying contact lenses.

Su, Au Qtrs. 3 cl, 1 2-hr lab. Prereq: 432.

### 441 Practical Optometry I P 5

Theory and techniques of keratometry, skiametry, objective and subjective tests of refraction, accommodation, and functions of the extra-ocular muscles.

Au Qtr. 4 cl, 1 4-hr lab. Prereq: Optomtry 2nd yr standing, Physics 112, and Math 150.

### 442 Practical Optometry II P 4

Correlation and analysis of data; systematic determination of the etiology of anomalies and sources of visual discomfort and inefficiency; diagnosing and prescribing.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 441.

### 443 Practical Optometry III P 4

Ophthalmoscopy and examination of the external parts and the media of the eye; case histories; techniques of investigating special types of anomalies; diagnosing; prescribing.

Sp Qtr. 3 cl, 1-3 hr lab. Prereq: 442.

### 641 Clinical Practice in Optometry I P 2

Consideration of selected problems and conditions encountered in the delivery of patient care.

Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: 443.

### 642 Clinical Practice in Optometry II P 2

Continuation of 641.

Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: 641.

### 643 Clinical Practice in Optometry III P 2

Continuation of 642.

Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: 642.

### 645 Intermedicate Special Clinical Practice P 1-6

Clinical experience in specialized phases of optometric practice.

Su, Au, Wi, Sp Qtrs. 3-18 clinic hrs.

#### 645.01 Intermediate General Practice

Clinical practice in examining the visual system and carrying out corrective procedures.

Prereq: Optomtry 3rd yr standing and 443. Repeatable to a maximum of 30 cr hrs.

#### 645.02 Intermediate Ophthalmic Dispensing

Prereq: Optomtry 3rd yr standing and 443. Repeatable to a maximum of 30 cr hrs.

#### 645.03 Clinical Practice Management

Observation and participation in management procedures of a professional optometric practice.

3-9 clinic hrs. Prereq: Optomtry 2nd yr standing and 442. Repeatable to a maximum of 15 cr hrs.

### 651 Orthoptics P 4

Definitions, characteristics, incidence, and phenomenology of visual problems producing loss or inefficiency of binocular vision; diagnosis, prognosis, and orthoptic treatment of such problems.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: Optomtry 3rd yr standing and 443.

### 652 Aniseikonia and Low Vision P 4

Etiology; clinical methods of diagnosing and evaluating aniseikonia and low vision; design of optical aids for such conditions; environmental aids and agencies available to the visually handicapped.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: Optomtry 3rd yr standing and 443.

### 653 Contact Lenses I P 4

The uses of contact lenses; theory and methods of prescribing and fitting; specification and verification; post-fitting care; contact lens solutions.

Au, Wi Qtrs. 3 cl, 1 2-hr lab. Prereq: Optomtry 3rd yr standing and 443.

### 654 Contact Lenses II P 4

Theory and clinical methods involving meridional and bifocal contact lenses; fitting astigmatic corneas and aphakic eyes; haptic and keratoconic lenses; cosmetic shells and prosthetic eyes.

Wi, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: 653.

### 660 Ophthalmic Pathology P 5

Gross and microscopic pathology of the eye, including diseases of the conjunctiva, orbital cavity, and pertinent pathology of the central nervous system.

Au Qtr. 3 cl, 4 lab hrs. Prereq: Optomtry 2nd yr standing, Pathology 650.

### 682 Clinical Ocular Pharmacology P 3

A survey of pharmacologic principles pertaining to drugs which relate to normal and abnormal conditions of the eye, including topical and systemic agents affecting visual performance.

Su, Au Qtrs. 3 cl. Prereq: Pharmacol 681, and 3rd yr standing in optomtry. Open only to students registered in the College of Optometry.

### 701 Applied Pathology of the Eye I P 4

Advanced ophthalmoscopy, slit lamp microscopy, tonometry, and other methods of detecting pathological conditions; systematic study of ocular diseases; artificial eyes and other prosthetic devices.

Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 443 and Phys Opt 608.

**702 Applied Pathology of the Eye II P 4**

Motor disturbances of eyes.

Su Qtr. 3 cl, 1 2-hr lab. Prereq: 701.

**703 Applied Pathology of the Eye III P 4**

Visual fields testing and method of management of related ocular disorders.

Su Qtr. 3 cl, 1 2-hr lab. Prereq: 702.

**721 Optometric Economics and Jurisprudence P 3**

Historical background; legal status; practice building techniques; office accounting and general practice management; representative organizations in optometry; professional ethics.

Wi, Sp Qtrs. 3 cl. Prereq: 643.

**722 Civic and National Problems in Eye Care P 3**

Number, distribution, supply interrelationships, and roles of the various ophthalmic groups; prevalence of visual anomalies; governmental and public-health aspects of vision care.

Wi Qtr. 3 cl. Prereq: 721.

**741 Advanced Practical Optometry I P 2**

Consideration of selected conditions encountered during the 4th year clinical assignments; their diagnosis and treatment.

Au Qtr. 2 cl. Prereq: 643.

**742 Advanced Practical Optometry II P 2**

Continuation of 741.

Wi Qtr. 2 cl. Prereq: Optomtry 4th yr standing and 741.

**743 Advanced Practical Optometry III P 2**

Continuation of 742.

Sp Qtr. 2 cl. Prereq: Optomtry 4th yr standing and 742.

**745 Special Clinical Practice P 1-6**

Clinical experience in specialized phases of optometric practice.

Su, Au, Wi, Sp Qtrs. 3-18 clinic hrs. Prereq: Optomtry 4th yr standing and course indicated in selected subdivision. Repeatable to a maximum of 30 cr hrs.

**745.01 General Practice**

Prereq: 643.

**745.02 Contact Lenses**

Prereq: 654.

**745.03 Strabismus and Orthoptics**

Prereq: 651.

**745.04 Ocular Pathology**

Prereq: 703.

**745.05 Aniseikonia**

Prereq: 652.

**745.06 Low Vision**

Prereq: 652.

**745.07 Perceptual-Motor Problems**

Prereq: 643.

**745.08 Ophthalmic Dispensing**

Clinical experience in ophthalmic dispensing.

Prereq: 643.

**745.09 Geriatric Optometry**

Specialized techniques, evaluation methods, patient instructions, and lens design appropriate to the vision problems of the older patient.

Prereq: 643.

**745.10 Pediatric Optometry**

Specialized testing techniques and methods of evaluation appropriate to infants and children (through age 12) as well as exceptional children of any age.

Prereq: 643.

**780 Topics in Optometry P 1-5**

Clinical and theoretical aspects of areas of current interest in optometry.

Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in College of Optometry and permission of dean. Repeatable to a maximum of 30 cr hrs. Each subdivision repeatable to a maximum of 10 cr hrs.

**780.01 General Optometry****780.02 Contact Lenses****780.03 Strabismus****780.04 Ocular Pathology****780.05 Aniseikonia****780.06 Low Vision****780.07 Visual Development****780.08 Visual Perception****780.09 Visual Performance****780.10 Environmental Vision****780.11 Pediatric Optometry****780.12 Geriatric Optometry****780.13 Ophthalmic Optics****780.14 Special Optical Design****780.15 Optometric Instrumentation****780.16 Public Health Optometry****780.17 Ocular Pharmacology****780.18 Microbiology of the Eye****780.19 Binocular Vision****780.20 Visual Problems of Minorities****780.21 Special**

## Otolaryngology

Education Office: 4100 University Hospital Clinic, 456 West 10th Avenue, 293-8065

The faculty of the Department of Otolaryngology is responsible for instruction in the pathophysiology of disease of the ear, nose, and throat as part of MED II of the medical curriculum. This instruction is offered under the course designated Med Coll 663. The Department also offers clinical instruction in otolaryngology during MED III and MED IV of the medical program designated Med Coll 664. This instruction is offered as a clinical elective period of 2 weeks to 1 month and as part of the ophthalmology/otolaryngology elective.

**794 Group Studies in Otolaryngology P 6**

Clinical application of the principles of otolaryngology with patients in clinic and operating room; at least one hour daily supervised teaching by staff members; instruction by slides, films, seminars, and personal supervision. Schuller and staff.

1 month, offered all months. Prereq: Permission of instructor. This course is graded S/U.

## Pathology

Education Office: 4164 Graves Hall, 333 West 10th Avenue, 292-6931

**501 Principles of Hematopathology U 2**

Clinical hematology, including coagulation; urinalysis. Brandt and Theil.

Au Qtr. 2 cl. Prereq: Admission to med tech or permission of instructor. This course is no longer graded S/U.

**502 Principles of Clinical Microbiology U 2**

Clinical microbiology, including mycology. Ayers and Buesching.

Wi Qtr. 2 cl. Prereq: Admission to med tech or permission of instructor. This course is no longer graded S/U.

**503 Principles of Immunology U 1**

Immunology. Sedmak.

Sp Qtr. 1 cl. Prereq: 502 and admission to med tech or permission of instructor. This course is no longer graded S/U.

**504 Principles of Clinical Chemistry U G 3**

Clinical blood and tissue chemistry; modes of investigating diseases by biochemical methods, and their interpretation. Lott.

Sp Qtr. 30 lec hrs. Prereq: Admission to med tech or permission of instructor. This course is no longer graded S/U.

**505 Principles of Immunohematology U 1**

Immunohematology. Kennedy.

Au Qtr. 1 cl. Prereq: 503 and admission to med tech or permission of instructor. Grad students will be expected to write a more detailed paper for the course.

**601 General Pathology G 5**

Pathophysiology and manifestations of disease. Boesel.

Au Qtr. 39 hrs lecture, 10 3-hr labs. Prereq: One course in anatomy, physiol, organic chem, biochem and permission of instructor.

**640\* Fundamentals of Oncology P G 4**

Lecture/seminars covering aspects of oncology; chemical and biologic carcinogenesis, epidemiology, genetics, developmental biology, biochemistry, cell kinetics, clonality, metastases, hormonal and immunology factors, and therapy. Barth and Capen.

Wi Qtr. 4 cl. Prereq: Permission of instructor. Cross-listed in Vet Path.

**650 Pathology P G 5**

Designed to give optometry and selected graduate students an understanding of general pathology including cell injury, inflammation, infection, hemodynamic disturbances, neoplasia, basic immunopathology, and selected specific diseases; with gross and histologic demonstrations.

Au Qtr. 5 cl. Prereq: Optomtry 2nd yr standing or permission of instructor.



**655 General Pathology P 4**

General pathology, including the etiology of diseases, disturbances of nutrition, inflammation, regeneration, and organ pathology. Marquard.  
Wi Qtr 4 cl, 2 3-hr lab. Prereq: Dent 2nd yr standing.

**665\* Clinical Immunopathology P G 3**

Current overview of clinical immunopathology, etiology, clinical characteristics, and lab diagnosis of immune-mediated diseases. Sedmak.  
Wi Qtr. 3 cl. Prereq: Permission of instructor. Med Micr 701 or Micrbiol 632 or equiv grad immunology course strongly recommended.

**670 Medical Cytogenetics G 3**

Overview of cytogenetics in medical diagnosis and evaluation, including laboratory techniques, nomenclature, structural and numerical chromosome abnormalities, molecular diagnostics, and clinical correlations.

Au Qtr. 3 cl. Prereq: Course work in general genetics and molecular or cell biology, and permission of instructor. Theil, Moore.

**680 Research Design in Biomedical Sciences U G 3**

Concepts related to initiating and conducting research; experimental design; use of computer graphics and statistics; and analysis of research reports. Lott.

Wi Qtr. 1 2-hr cl, 1 hr arr. Prereq: Sr standing in all med with permission of instructor, or grad standing in all med, pathol or related field.

**792 Special Lectures in Pathology**

Lectures in special fields of pathology; one decimal subdivision will be offered each quarter.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Grad standing or enrollment in MD program or undergrad with permission of instructor.

**792.01 Blood and Bone Marrow U P G 3**

Pathology of the blood and bone marrow with emphasis on the laboratory diagnosis of anemia. Theil.

Repeatable to a maximum of 24 cr hrs.

**792.02 Lectures in Clinical Chemistry U P G 3**

The metabolic basis of disease, interpretation of laboratory data, and clinical laboratory methodology. Newman and Lott.

**792.04 Neuropathology U P G 3**

Selected lectures on neuropathology. Yates.

Repeatable to a maximum of 24 cr hrs.

**792.05 Immunohematology U P G 3**

Transfusion related clinical and laboratory problems and procedures. Kennedy.

Repeatable to a maximum of 24 cr hrs.

**792.11 Automation and Instrumentation in Clinical Chemistry U P G 3**

Advanced analytical technique as applied to clinical chemical problems with discussion of the applicable area of chemical pathology. Lott.

Repeatable to a maximum of 24 cr hrs.

**792.20 Topics in Clinical Pathology G 2**

Review of current topics in laboratory medicine. Marsh and Theil.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 16 cr hrs.

**793 Individual Studies in Pathology U P G 3-6, 12, 18**

1, 2, or 3 months; offered all months. (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: Med III and IV standing, grad standing, or undergrad standing with permission of instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course must be taken. Each subdivision repeatable to 18 cr hrs. These courses are graded S/U.

**793.01 Pathologic Anatomy**

Sharma.

**793.04 Clinical Chemistry**

Lott and Newman.

**793.05 Neuropathology**

Rampersand.

**793.06 Immunohematology**

Kennedy.

**793.07 Clinical Microbiology**

Ayers.

**793.08 Pediatric Pathology**

Qualman.

**793.09 Surgical Pathology**

Lucas and Marsh.

**793.11 Special Topics in Pathologic Anatomy**

Sharma.

**793.12 Ultrastructure of Cells in Disease**

Sharma.

**793.15 Problems in Pathology and Clinical Pathology****794 Group Studies in Pathology U P G 1-3**

Group studies of selected topics in various fields of pathology.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing, 2nd yr med student, or undergrad with permission of instructor. Repeatable to a maximum of 12 cr hrs.

**850 Seminar in Pathology and Clinical Pathology G 1**

Discussion of pertinent literature, presentation and discussion of research work, and demonstration of fresh specimens and slides.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Grad standing in pathol. This course is graded S/U.

**851 Neurochemical Pathology G 1**

Lecture series on selected topics relevant to biochemical mechanisms of neurological disorders; topics change each qtr.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in pathol. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research in Pathology G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Pediatrics

Children's Hospital, 700 Children's Drive and N-118 Doan Hall, 410 West 10th Avenue, 461-2076

**793† Individual Studies in Pediatrics**

Su, Au, Wi, Sp Qtrs (grad cr). 1, 2, 3, or 4 months (prof cr). Prereq: Permission of instructor. These courses are graded S/U/I.

**793.02 Genetics P 6, 12, 18 G 1-5**

Sommer.

1, 2, or 3 months; offered all months. Repeatable to a maximum of 18 cr hrs for professional credit.

**793.03 Infectious Diseases P 6, 12, 18 G 1-5**

Powell.

1, 2, 3, or 4 months; offered all months. Repeatable to a maximum of 24 cr hrs for professional credit.

**793.06 Blood Diseases of Infants and Children P 6 G 1-5**

Ruymann.

1 month, offered all months except June.

## Persian

256 Cunz Hall, 1841 Millikin Road, 292-9255

**101 Elementary Persian I U 5**

Introduction to Persian; development of listening, reading, speaking, and writing skills.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

**102 Elementary Persian II U 5**

Further development of listening, reading, speaking, and writing skills.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

**103 Intermediate Persian I U 5**

Development of listening, reading, speaking, and writing skills; reading of simplified literary texts about Persian culture.

Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

**104 Intermediate Persian II U 5**

Reading of Persian short stories and poems with attention to literary and cultural appreciation; development of basic language skills.

Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

**241 Persian Culture U 5**

A survey of Persian culture through the reading of Persian literature in translation, viewing of Persian films, and listening to Persian music.

Sp Qtr. 5 cl. BER/GEC/LAR course.

**Masterpieces of Near Eastern Literatures in Translation**

See NJH 272.

**293 Individual Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Special topics to be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**371\* Persian Literature in Translation U 5**

A study of Persian literature in translation and the history of its discourses, genres, and styles.

Wi, Sp Qtrs. 5 cl. BER/GEC/LAR course.

**401 Advanced Persian I U 5**

Extensive reading from literary texts, with practice in conversation and composition.

Wi Qtr. 5 cl. Prereq: 104 or equiv. Not open to students with credit for 294 Wi Qtr 1983 or Wi Qtr 1984.

**402 Advanced Persian II U 5**

Advanced reading from literary texts, with further practice in conversation, composition, and translation.

Sp Qtr. 5 cl. Prereq: 401 or equiv. Not open to students with credit for 294 Sp Qtr 1983 or Sp Qtr 1984.

**651 Persian Prose U G 5**

Selected readings reflecting the major genres of classical Persian prose, plus a modern novel.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 402 or permission of instructor.

**652 Persian Poetry U G 5**

Selected topics in Persian poetry, concentrating primarily on the medieval poetic narrative, as exemplified by epic, romance, and the mystical/didactic poem.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 402 or permission of instructor.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Special topics to be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation *with distinction*, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research in Persian G 1-10**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

## Pharmacology

5072 Graves Hall, 333 West 10th Avenue, 292-8608

**600 General Pharmacology U G 3**

Introduction to the general principles of pharmacology, drug classification, and the sites and mechanisms of drug action. Tejwani.

Sp Qtr. Prereq: MBiochem 611, Physiol 601, or permission of instructor.

**680 General Pharmacology for Optometrists P 3**

A survey of general pharmacologic principles and actions; effects of drugs on the central-nervous system, cardiovascular system, and other systems. Fertel.

Sp Qtr. 3 cl. Prereq: 1st yr standing in optomtry. Open only to students registered in the College of Optometry.

**700 Medical and Mammalian Pharmacology**

General principles of pharmacology; drugs used for diagnosis, prevention, or eradication of the cause of disease, including endocrine products and chemotherapeutic agents. Tjioe.

Prereq: 600 or permission of instructor.

**700.01 Pharmacokinetics, Antimicrobial, and Autonomic Drugs P G 3-4**

Au Qtr.

**700.02 Cardiovascular, Respiratory, and Endocrine Drugs P G 3-4**

Wi Qtr.

**700.03 Central Nervous System and Anticancer Drugs; Toxicology and Drug Interactions P G 3-5**

Sp Qtr.

**701 Medical and Mammalian Pharmacology P G 3**

Continuation of 700. Boyd and staff.

Sp Qtr. 5 cl hrs. Prereq: 700.

**702 Practice of Pharmacology P G 3**

Performance and application of specialized pharmacological techniques and methods in evaluation of pharmacodynamic and pharmacokinetic activity of chemical substances. Tjioe and staff.

Au Qtr. Prereq or concur: 701.

**751 Professional and Ethical Issues in Biomedical Sciences G 3**

A discussion course based on case scenarios dealing with ethical issues facing biomedical researchers, such as publishing practices, confidentiality, mentoring, etc.

Wi Qtr. 2 -hr cl. Prereq: Currently enrolled in a graduate program in the biomedical sciences. Cross-listed in Veterinary Physiology. Graded S/U.

**793 Individual Studies in Pharmacology P 6, 12, 18 G 3-15**

Digitalis pharmacodynamics; neuropharmacology; endocrine pharmacology; cardiovascular pharmacology; autonomic pharmacology, clinical pharmacology; biochemical pharmacology; toxicology. Staff.

1, 2, 3, months; offered all months except June (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**820 Autonomic Pharmacology G 3**

Comprehensive review of drugs that mimic or affect the actions of autonomic neurones with emphasis on biochemical and cellular analysis of autonomic drug action. Tjioe.

Wi Qtr. Prereq: 701 or permission of instructor.

**821\* Cardiovascular Pharmacology G 15**

Modern concepts of the action of drugs on the heart and circulation.

Sp Qtr. 2 cl, lab arr. Prereq: Permission of instructor.

**824\* Psychopharmacology G 3**

Psychotropic drug-induced changes in central nervous system activity in relation to the varieties of perceptual-behavioral interpretations of that activity by self-referential systems, i.e. man. N. Neff.

Wi Qtr. 2 cl arr. Prereq: 600, 701, or permission of instructor.

**850 Seminar in Pharmacology G 2**

Conferences on selected topics in pharmacology. N. Neff.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs.

**894 Group Studies in Pharmacology G 3-5**

Designed to allow the introduction of new topics and innovative approaches to the curriculum.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**999 Research in Pharmacology G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Pharmacy

217 Lloyd M. Parks Hall, 500 West 12th Avenue,  
292-2266

The divisions of instruction and the courses in the College of Pharmacy comprising these divisions are listed below:

### Medicinal Chemistry and Pharmacognosy

434, 440, 441, 442, 461, 462, 465, 577, 693, 694, 737, 789, 835, 836, 846, 850, 851, 894, 993, 999.

### Pharmaceutical Administration

515, 521, 522, 625, 693, 694, 814, 816, 817, 821, 824, 825, 826, 827, 850, 884, 894, 970, 993, 999.

### Pharmaceutics and Pharmaceutical Chemistry

402, 403, 404, 405, 406, 501, 502, 506, 603, 693, 694, 701, 707, 710, 800, 800.01, 800.02, 802, 811, 812, 850, 894, 993, 999.

### Pharmacology

200, 470, 671, 672, 674, 677, 681, 693, 694, 740, 741, 850, 870, 871, 872, 881, 894, 993, 999.

### Pharmacy Practice

400, 513, 516, 517, 518, 519, 528, 546, 547, 548, 614, 615, 616, 619, 685, 686, 689, 693, 694, 695, 712, 713, 719, 720, 743.13-743.17, 743.19-743.29, 744, 745.01-745.16, 785, 794, 795, 814, 850, 894, 993, 999.

### 200 The Rational and Irrational Use of Drugs U 3

Survey of the fundamentals of drug action with special emphasis on drugs of abuse; discussion of medical, social, legal, and educational aspects of drug use. Uretsky.

Au, Sp Qtrs. 3 cl. Not open for credit to students in the College of Pharmacy. NS Admis Cond course.

### 400 Introduction to Pharmacy P 2

A survey of the profession of pharmacy, dealing with its history, educational requirements, organization, regulation, and current developments. Hale.

Au Qtr. 1 2-hr cl. This course is graded S/U.

### 402 Pharmaceutical Calculations P 1

Introduction to prescription terminology and pharmacy calculations; emphasis on measurement systems, conversion, percentage preparations, calculation of doses, dilutions, milliequivalents, and milliosmoles. Burns and Cable.

Au Qtr. 1 cl. Prereq: Math 152, 2nd yr standing in pharmacy.

### 403 Pharmaceutics I P 3

The application of physical chemical principles to pharmaceutics: a fundamental introduction to solid and liquid dosage forms. Burke and Rice.

Wi Qtr. 3 cl. Prereq: 440; Chem 253; Chem 244, 246, or 255; and Math 152.

### 404 Prescription Pharmacy Practice I P 2

The principles and practice of pharmaceutical dispensing: simple solutions, syrups, elixirs, dilutions, and aerosols. Burns.

Wi Qtr. 1 3-hr lab; 1 cl. Prereq: 402; prereq or concur: 403; Chem 253; Chem 244, 246, or 255; and Math 152.

### 405 Pharmaceutics II P 3

The application of physical chemical principles to pharmaceutics and biopharmaceutics; colloids, suspensions, emulsions, solid, and topical dosage forms and the formulation factors affecting drug availability. Frank.

Sp Qtr. 3 cl, 1 recitation. Prereq: 403.

### 406 Prescription Pharmacy Practice II P 2

The principles and practice of pharmaceutical dispensing: lotions, creams, ointments, powders, capsules, and suppositories. Frank and Burns.

Sp Qtr. 1 3-hr lab; 1 cl. Prereq: 403 and 404; prereq or concur: 405.

### 434 Pharmaceutical Analysis P 4

An introduction to quantitative analysis of pharmaceuticals. Zehfus.

Au Qtr. 2 cl, 6-hr lab, computer managed instruction. Prereq: Chem 253; Chem 244, 246, or 255; and Math 152.

### 440 Principles of Medicinal Chemistry U P 2

An introduction to functional group properties of importance to drugs, heterocycles, acidity and basicity, metabolism, physico-chemical properties of drugs, and drug-receptor interactions. Curley.

Au Qtr. 2 1-hr cl, 1 1-hr rec. Prereq: Chem 253. The introductory course in a 3-qtr undergrad sequence in medicinal chemistry.

### 441 Medicinal Chemistry I U P 3

Chemical and biochemical principles governing the properties of drugs affecting the peripheral nervous system, cardiovascular drugs, general anesthetics, sedative hypnotics, muscle relaxants, anticonvulsants, neuroleptics, antidepressants, CNS stimulants, and analgetics. Brueggemeier, Soloway, and Bergmeier.

Wi Qtr. 3 cl, 1 recitation. Prereq: 440 and 461. Open to non-pharmacy students by written permission of instructor.

### 442 Medicinal Chemistry II U P 3

Chemical and biochemical principles governing the properties of drugs affecting the central nervous system, steroids, carcinogenesis and environmental chemicals, and cancer chemotherapeutic agents. Brueggemeier and Curley.

Sp Qtr. 3 cl, 1 recitation. Prereq: 441. Open to non-pharmacy students by written permission of instructor.

### 461 Bio-Pharmacy I P 3

A study of the chemical building blocks of biological systems and their properties. Priestley.

Au Qtr. 3 cl, 1 recitation. Prereq: Chem 253.

### 462 Bio-Pharmacy II P 3

A study of biochemical processes pertinent to the status of health and disease and the use of pharmaceutical agents. Priestley and Staff.

Wi Qtr. 3 cl, 1 recitation. Prereq: 461. 30 lectures pharmaceutical biochem only.

### 465 Pharmacognosy P 4

Basic and clinically useful information concerning the medically important antibiotics, alkaloids, and glycosides. Robertson.

Sp Qtr. 4 cl. Prereq: 462; prereq or concur: Microbiol 509.

### 470 Pharmacology for Nurses P 4

A survey of the important drugs used in medicine and a consideration of their therapeutic applications. McKay and Holycross.

Sp Qtr. 2 2-hr cl. Prereq: Chem 102 or 122, and Zoology 232 or Physiol 312. Open only to students registered in the School of Allied Medical Professions and the College of Nursing or by permission of instructor.

### 501 Pharmaceutics III P 3

The application of biopharmaceutics and pharmacokinetic principles to drug absorption, distribution, and elimination. Staubus.

Au Qtr. 3 cl. 1 2-hr recitation, Prereq: 405 and 441.

### 502 Prescription Pharmacy Practice III P 2

Principles and practice of pharmaceutical dispensing: instruction and use of aseptic technique and application of pharmaceutical principles and techniques to the solution of prescription problems. Staubus and Burns.

Au Qtr. 1 cl, 1 3-hr lab. Prereq: 405 and 406; prereq or concur: 501.

### 506 Pharmaceutics IV P 3

The application of biopharmaceutical and pharmacokinetic theory to dosage regimen adjustment, drug and drug product selection, evaluation and use, and optimizing drug therapy. Hayton.

Wi Qtr. 3 cl, 1 recitation. Prereq: 501.

### 513 History of Pharmacy

#### 513.01\* Lecture U P 3

Evolution and development of the profession of pharmacy from antiquity to the present, with emphasis on its Anglo-American development since the 18th century. Buerki.

Au Qtr. 3 cl. Prereq: Jr standing or permission of instructor.

#### 513.02 Laboratory U P 1

The work of the pharmacist before the rise of modern pharmaceutical science. Buerki.

Arrange. 1 2-hr lab. Prereq: Jr standing or permission of instructor; prereq or concur: 513.01.

#### 513.03 Practicum U P 1

Supervised discussions and demonstrations of 19th-century pharmaceutical techniques in a museum setting. Buerki.

Su, Au, Sp Qtrs. 1 cl, field work arr. Prereq: Jr standing or permission of instructor; prereq or concur: 513.01 and 513.02. Repeatable to a maximum of 3 cr hrs. This course is graded S/U. Students may obtain up to 300 hrs of internship or toward their Ohio State Board of Pharmacy internship requirement by participating in this course.

### 515 Pharmaceutical Distribution and Health Care Systems U P 4

A study of the pharmaceutical distribution system in the United States and its relation to the health care system. Birdwell.

Wi Qtr. 2 1 1/2-hr cl, 1 2-hr cl. Prereq: Jr standing or permission of instructor. Not open to students with credit for 520.

### 516 Fundamentals of Disease P 4

A study of the basic pathological principles and a review of the etiology, pathogenesis, and pathology of common human diseases subject to modification by pharmacotherapy. Dasta and clinical staff.

Au Qtr. 4 cl. Prereq: 462, Anatomy 199 or 200, Physiol 312, and Microbiol 509.

### 517 Pharmacotherapeutics I P 3

The application of the pharmaceutical and biomedical sciences to the treatment and management of common human diseases. Brackett and Clinical staff.

Wi Qtr. 2 1 1/2-hr cl. Prereq: 516 and 671; prereq or concur: 506 and 672.

**518 Pharmacotherapeutics II P 3**

The application of the pharmaceutical and biomedical sciences to the treatment and management of common human diseases. Nahata and clinical staff.

Sp Qtr. 2 1½-hr cl. Prereq: 517.

**521 Pharmacy Practice Management I P 3**

Management principles, functions, and skills and their applications in pharmacy practice. Schommer.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: 515.

**522 Pharmacy Practice Management II P 5**

Financial and logistical concepts and techniques for management decision-making in hospital and community settings. Kucukarslan.

Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 515, 521.

**528 Pharmacy Communications P 3**

Communication problems arising out of professional relations of the pharmacist with the physician, medical interns, nurses, laboratory technicians, and especially patients. Buerki.

Wi Qtr. 2 cl, 1 2-hr workshop. Prereq: Jr or sr standing in pharmacy.

**546 Clerkship I U P 1**

The use of problem-solving skills to interpret and understand medical information in patient charts as related to specific disease processes. Bennett, McAuley and clinical staff.

Au Qtr. 1 2-hr cl. Prereq: Jr standing or permission of instructor; concur: 516. This course is graded S/U.

**547 Clerkship II U P 1**

On-site/classroom evaluations of drug therapy, with an emphasis on development of verbal communication skills between pharmacists and patients, and utilization of drug information resources. Bennett, McAuley and clinical staff.

Wi Qtr. 1 2-hr cl. Prereq: Jr standing or permission of instructor; concur: 517. This course is graded S/U.

**548 Clerkship III U P 1**

On-site evaluation of drug therapy in hospitalized or out-patients, with an emphasis on development of communication and decision-making skills. Bennett, McAuley and clinical staff.

Sp Qtr. 1 2-hr cl. Prereq: Jr standing or permission of instructor; concur: 518. This course is graded S/U.

**577 Biological Products P 3**

USP standards and legal requirements governing manufacture, standardization, storage, and distribution of toxins, antitoxins, serums, and vaccines. Robertson.

Au Qtr. 3 cl. Prereq: Microbiol 509.

**603\* Chemotherapy of Cancer U P G 3**

Fundamentals of cancer chemotherapy, pharmacokinetics, and mechanism of action of anticancer agents, with emphasis on the biological, biochemical, biopharmaceutical, and pharmacological determinants of drug action. Au.

Sp Qtr. 3 cl. Prereq or concur: 501 and 674, or permission of instructor.

**614\* Professional Ethics P 2**

The conceptual basis and content of pharmaceutical ethics; significance of codified ethics, interprofessionally considered; differences of view underlying ethical issues; methods of encouraging compliance. Buerki.

Sp Qtr. 1 2-hr cl. Prereq: Jr standing or permission of instructor.

**615\* Sterile Products P G 3**

Formulation, preparation, and testing of sterile products including injections, bulk solutions, and nasal and ophthalmic preparations. Haas and Clinical Staff.

Au Qtr. 2 cl, 1 3-hr lab. Prereq: 502 or equiv.

**616 Medical Applications of Radionuclides and Radiopharmaceuticals P G 3**

A study of the theoretical and clinical aspects of the preparation, use, control, and handling of radionuclides and radiopharmaceuticals used in medicine. Hinkle.

Wi Qtr. 3 cl. Open to students with jr standing in College of Pharmacy or School of Allied Medical Professions.

**619 Nonprescription Drug Products P 3**

Didactic and practical experience in appropriate nonprescription drug product selection, monitoring, and patient information. Bennett.

Au, Sp Qtrs. 2 2-hr cl. Prereq 518 and 674 or concur with permission of instructor.

**625 Pharmaceutical Jurisprudence P 3**

A study of the laws and regulations relating to the practice of pharmacy with emphasis on cases and court decisions illustrating the pharmacist's responsibilities. Grauer.

Au, Sp Qtrs. 3 cl. Prereq: Jr standing or permission of instructor.

**H650 Pharmacy Honors Seminar P 1**

Presentation of pharmaceutical science and pharmacy practice topics by honors students and guest lecturers.

Sp Qtr. 1 cl. Prereq: Enrollment in PHR honors program. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**671 Systematic Pharmacology I P G 5**

A comprehensive study of the pharmacodynamic, toxicological, and therapeutic effects of drugs on living organisms with emphasis on their rational application to the treatment of disease in humans. Feller, Holycross, Patil, Rahwan and Young.

Au Qtr. 5 cl. Prereq: 442, 462, and Physiol 312 or equiv. Open to non-pharmacy students with written permission of instructor.

**672 Systematic Pharmacology II P G 5**

A comprehensive study of the pharmacodynamic, toxicological, and therapeutic effects of drugs on living organisms with emphasis on their rational application to the treatment of disease in humans. Uretsky, Burkman, and McKay.

Wi Qtr. 5 cl. Prereq: 671.

**674 Systematic Pharmacology III P G 5**

A comprehensive study of the pharmacodynamic, toxicological, and therapeutic effects of drugs on living organisms with emphasis on their rational application to the treatment of disease in humans. Burkman, Holycross, Rahwan and Wallace.

Sp Qtr. 5 cl. Prereq: 672.

**677 Toxicology of Mutagens, Carcinogens, and Teratogens U P G 3**

Fundamentals of modern and environmental toxicology, emphasizing principles of teratology, carcinogenesis, and mutagenesis. Rahwan.

Wi Qtr. 3 cl. Prereq: Physiol 312 or 602 or permission of instructor.

**681 Ocular Pharmacology P 3**

A survey of the general principles of drug action and the properties of drugs affecting ocular structure and function. Burkman and Patil.

Sp Qtr. 3 cl. Prereq: 2nd yr standing in optometry. Open only to students registered in the College of Optometry.

**685 Community/Clinical Practice Externship P 5**

Pharmacy students, under the supervision of college faculty and community pharmacists, gain experience in community pharmacy practice. Cable and preceptor staff.

Su, Au, Wi, Sp Qtrs. 3 or 4 wks minimum of 40 hr/wk. Prereq: 502, 506, 518, 674, and licensure by the Ohio Board of Pharmacy as pharmacy intern; concur: 686 and 689. This course is graded S/U.

**686 Institutional/Clinical Practice Externship P 5**

Pharmacy students, under the supervision of college faculty and institutional pharmacists, gain experience in institutional (e.g., hospital, mental health facility) pharmacy practice. Cable and preceptor staff.

Su, Au, Wi, Sp Qtrs. 3 or 4 wks minimum of 40 hr/wk. Prereq: 502, 506, 518, 674, and licensure by the Ohio Board of Pharmacy as pharmacy intern; concur: 685 and 689. This course is graded S/U.

**689 Clinical Practice in Pharmacy P 5**

A basic clinical clerkship experience in various pharmacotherapeutic and clinical pharmacy practice areas with emphasis on an interdisciplinary health team approach. Cable and clinical staff.

Su, Au, Wi, Sp Qtrs. 3 or 4 wks minimum of 40 hrs/wk. Prereq: 502, 506, 518, 674, and licensure by Ohio Board of Pharmacy as pharmacy intern; concur 685 and 686. This course is graded S/U.

**693 Individual Studies in the Pharmaceutical Sciences P 1-5**

Laboratory and library work designed to give the qualified student an opportunity to complete an original investigation or pursue an interest in a special problem.

Su, Au, Wi, Sp Qtrs. Prereq: Jr standing, a cumulative pt-hr ratio of 2.50, and permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies in Pharmacy**

Group studies of selected topics in various fields of pharmacy.

Prereq: Permission of instructor.

**695 Seminar in Clinical Pharmacy Career Pathways P 2**

Discussion and analysis of career pathways in clinical pharmacy and preparation of a career plan paper. Reuning and clinical staff.

Sp Qtr. 2 cl. Prereq: 400 and soph standing.

**701 Concepts of Pharmaceutical Research I P G 3**

Presentation of some basic principles and techniques used in pharmaceutical research and product development: drug stabilization, solubilization, complexation, and macromolecule interactions. Frank.

Wi Qtr. 3 cl. Prereq: 506 or equiv with written permission of instructor.

**712 Clinical Pharmacokinetics I P G 4**

Basic concepts of drug disposition, pharmacokinetics and response kinetics, and the application of these concepts to optimizing specific drug therapy. Reuning, Coyle, and Brackett.

Sp Qtr. 3 cl, 1 2-hr rec. Prereq: 506; prereq or concur: 518 and 674; or permission of instructor.

**713 Advanced Clinical Pharmacokinetics II P G 6**

Anatomical and physiological basis of pharmacokinetics; emphasis on the influence of disease states on the pharmacokinetics of drugs, and drug dosage alterations in patients. Coyle.

Su Qtr. 3 2-hr cl. Prereq: 712 or equiv, and admission to Pharm D program or permission of instructor.

**719 Drug Literature Evaluation P G 3**

Introduction to the fundamentals of drug information storage and retrieval and experiences in evaluating clinical drug studies. Visconti.

Au Qtr. 1 3-hr cl. Prereq: 518 and 674, or permission of instructor.

**720 Advanced Pharmacotherapeutics P G 4**

An advanced course emphasizing therapeutic principles based on medical pathophysiology, pharmacodynamics, and pharmacokinetics. Havard and clinical staff.

Au, Wi, Sp Qtrs. 3-5 2-hr cl. Prereq: 712 or equiv, and admission to Pharm D program or permission of instructor. Repeatable to a maximum of 12 cr hrs. Three-quarter sequence. Progress graded. Final grade awarded upon completion of 12 cr hrs.

**737 Advanced Pharmaceutical Analysis P G 5**

The use of specialized instruments in the assay and control methods of drugs and drug preparations. Zehfus and Olson.

Au Qtr. 3 cl, 2 3-hr lab. Prereq: Permission of instructor.

**740 Principles of Toxicology I G 3**

Introduction to the principles of toxicology and the factors that influence the expression of drug and chemical induced toxicological effects on major organ systems.

Au Qtr. 3 cl hrs. Prereq: Biochem 613 or equiv; Physiol 312 or equiv. Not open to students with credit for Dairy Sc 740 or Vet Phys 740. Cross-listed in Dairy Sc and Vet Phys and Pharmacology.

**741 Principles of Toxicology II G 5**

Toxicological effects of major classes of chemicals and current issues in toxicology, including air pollution, water quality, and hazardous waste.

Wi Qtr. 5 cl. Prereq: 740 or Dairy Sci 740 or Vet Phys 740; Biochem 511 or equiv; Physiol 602 or equiv. Not open to students with credit for Dairy Sci 741 or Vet Phys 741. Cross-listed in Dairy Science and Veterinary Physiology and Pharmacology.

**743 Pathophysiology for Clinical Pharmacists**

An independent study program in the pathophysiology of major human diseases associated with various organ systems. Havard and clinical staff.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to Pharm D program and permission of the director of the independent study program in the College of Medicine. Repeatable to a maximum of 55 cr hrs. These courses are graded S/U.

**743.13 Medical Immunology P 3****743.14 Behavioral Sciences P 2****743.16 Pathologic Mechanisms/Genetics P 5****743.19 Cardiovascular System P 7****743.20 Infectious Diseases P 5****743.21 Respiratory System P 3****743.22 Hematology System P 3****743.23 Gastrointestinal System P 3****743.24 Renal System P 5****743.26 Musculoskeletal System P 2****743.27 Endocrine System P 2****744 Physical Assessment P 3**

Didactic and clinical instruction involving history taking and physical examination pertaining to response to drug therapy. Gray.

Su Qtr. Prereq: Admission to PharmD program. This course is graded S/U.

**745 Advanced Clinical Practice in Pharmacy P 5-25**

An advanced clinical experience in various therapeutic and pharmacy practice areas. Clinical Staff.

Su, Au, Wi, Sp Qtrs. 1 or 2 months (fulltime). Prereq: Admission to Pharm D program or permission of instructor. Repeatable to a maximum of 60 cr hrs in any combination of decimal subdivisions. Each subdivision repeatable to a maximum of 25 cr hrs.

**745.02 Drug Information Service****745.03 Poison Control/Toxicology Service****745.04 Clinical Pharmacokinetics Laboratory****745.05 Pediatric Clinical Pharmacy****745.06 Cardiovascular Clinical Pharmacy****745.07 Critical Care Clinical Pharmacy****745.08 Psychiatric Clinical Pharmacy****745.09 Oncologic Clinical Pharmacy****745.10 Renal Clinical Pharmacy****745.11 Pulmonary Clinical Pharmacy****745.12 Infectious Disease Clinical Pharmacy****745.13 Gastroenterology Clinical Pharmacy****745.14 Parenteral Nutrition****745.15 Medical/Surgical Clinical Pharmacy****745.16 Applied Pharmacokinetics Service****745.17 Specialty Clinical Pharmacy****785 Special Topics in Pharmaceutical Sciences P 1**

Discussion of areas of basic and clinical research in which various faculty members of the College of Pharmacy are currently involved.

Wi Qtr. 1 2-hr cl. Prereq: Pharm D II standing or permission of instructor.

**789 Isolation Techniques in Research P G 5**

A study and application of selected isolation techniques for the purification of natural products or other organic mixtures. Curley and Priestley.

Wi Qtr. 3 cl, 2 3-hr lab. Prereq: Chem 253 and 244 or 246 or 255, or equiv, or permission of instructor.

**794 Group Studies in Clinical Pharmacy P 1-18**

Prereq: Admission to Pharm D program. Repeatable to a maximum of 50 cr hrs.

**795 Seminar P 1**

Seminar dealing with clinical pharmacy topics. Visconti and McAuley.

1 1-hr seminar. Prereq: Admission to Pharm D program or permission of instructor.

**795.01 Presentation**

Seminar designed to develop speaking and scientific presentation abilities of Pharm D students through presentation of research and therapeutic material.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 2 cr hrs.

**795.02 Participation**

Participation in seminar on therapeutic material.

Au, Wi Qtrs. This course is graded S/U.

**800 Radioisotope Tracer Techniques and Radiopharmaceuticals**

A survey of the properties of radioisotopes and radiation; radioisotope tracer methods and applications to pharmaceutical sciences; the preparation, standardization, and handling of radiopharmaceuticals. Brueggemeier, Chan, Feller and Young.

Au Qtr. 3 cl, 2 3-hr lab. Prereq: Permission of instructor.

**800.01 Principles of Radioisotope Tracer Techniques G 3**

A survey of properties of radioisotopes and radiation, instrumentation used for detection of radioisotopes, and radioisotope tracer methods and applications to biomedical sciences.

Au Qtr. 3 cl. Prereq: Permission of instructor.

**800.02 Laboratory in Radioisotope Tracer Techniques G 2**

Laboratory applications of radioisotope tracer methodology in biomedical sciences and operations of instruments used for detection of radioisotopes.

Au qtr. 2 3-hr labs. Concur: 800.01.

**802 Pharmacokinetics G 4**

The analysis of the absorption, distribution, and elimination of drugs, and the mathematical characterization of these processes, with emphasis on theory and application. Staubus.

Wi Qtr. 2 2-hr cl. Prereq: 674 and Math 152, or equivs with written permission of instructor.

**803\* Disposition of Xenobiotics T 3**

Principles and practical considerations in the study of xenobiotic pharmacokinetics and metabolism; current research approaches and techniques.

Sp Qtr. Arr.

**804\* Drug Transport G 3**

Theories and experimental approaches for the characterization of drug transport in biological and pharmaceutical systems.

Sp Qtr. 3 cl.

**805 Methods of Drug Delivery G 3**

In-depth evaluation of the current literature of methods being developed to control the rate of drug delivery and site of drug targeting.

Au Qtr. 2 1½-hr cl arr.

**806 Advanced Bioanalysis G**

Theory and practice of quantitative pharmaceutical and bioanalytical analysis in biological samples with emphasis on modern methods.

Sp Qtr.

**806.01 Principles of Advanced Bioanalysis G 4**

2 1½-hr cl. Prereq: Chem 253, 531, 532, Biochem 721.01, 721.02.

**806.02 Laboratory in Advanced Bioanalysis G 2**

Laboratory applications of pharmaceutical and bioanalytical methods.  
Arr lab. Prereq or concur: 806.01, and permission of instructor.

**812 Advanced Pharmacy G 3**

A study of the methods used to predict, determine, and improve the stability characteristics of medicinal agents in dosage form.  
Sp Qtr. 3 cl. Prereq: Chem 521 or 533, and permission of instructor.

**814 Issues in Drug Therapy for Pharmacy Administrators G 3**

Principles of drug therapeutics with application to hospital pharmacy departments. Moore and clinical staff.  
Sp Qtr. 3 cl. Prereq: 712.

**816 Pharmacy and Health Care Organizations G 4**

Administrative principles and concepts of pharmacy practice in various health care organizations. Birdwell.  
Wi Qtr. 2 1-hr cl, 1 2-hr cl.

**817 Hospital Pharmacy Operations G 4**

Administrative and professional principles and concepts of, and trends affecting, hospital pharmacy. Birdwell.  
Sp Qtr. 2 1-hr cl, 1 2-hr cl. Prereq: 816.

**821 Research Methodology in Pharmacy Practice P G 4**

Investigation of the research principles and methods involved in planning, analysis, and interpretation of studies and projects in pharmacy practice. Schommer.  
Au Qtr. 2 2-hr cl. Prereq: Econ 442 or Ed-F & R 786 or equiv.

**824 Evaluation of Pharmaceutical Programs G 4**

Overview and appraisal of the state-of-the art in the evaluation of pharmaceutical programs and services. Pathak.  
Wi Qtr. 2 1½-hr cl, 1 2-hr lab. Prereq: 821 or equiv.

**825 Pharmaceutical Distribution System and Public Policy G 4**

Investigation of the pharmaceutical markets with an emphasis on the marketing practices and the public policies affecting pharmaceutical firms. Kucukarslan.  
Sp Qtr. 2 2-hr cl. Prereq: 515 or Bus-Mktg 650 or equiv.

**826 Advanced Topics in Pharmaceutical Administration G 2**

Investigation and analysis of selected topics in pharmaceutical administration.  
Su, Au, Wi, Sp Qtrs. 3 cl. Repeatable to a maximum of 12 cr hrs.

**835 Advanced Medicinal Chemistry G 3**

Chemistry of autonomic receptor sites; recent literature references on the biological, chemical, and stereochemical requirements for adrenergic and cholinergic stimulation and blockade. Brueggemeier, Curley and Soloway.  
Au Qtr. 3 cl. Prereq: 674 or equiv, and Chem 833; or permission of instructor.

**836 Advanced Medicinal Chemistry G 3**

Selected topics in medicinal chemistry, the subject matter being drawn from the current literature. Brueggemeier, Curley and Soloway.  
Wi Qtr. 3 cl. Prereq: 674 or equiv, and Chem 833; or permission of instructor.

**850 Seminar G 1**

Round-table discussion, oral and written reports dealing with recent advances in the pharmaceutical sciences.

Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 30 cr hrs.

**850.01 Presentation**

Presentation of oral and written reports dealing with recent advances in the pharmaceutical sciences.

**850.02 Participation**

Participation in round-table discussion, oral, and written reports dealing with recent advances in the pharmaceutical sciences.

This course is graded S/U.

**851 Advanced Pharmacognosy G 3**

A study of research involving biosynthesis of plant constituents of pharmaceutical interest. Priestley and Robertson.  
Sp Qtr. 3 cl. Prereq: Biochem 707 or Botany 631 or permission of instructor.

**870 Drug Receptor Theory G 3**

A systematic examination of the ideas, notions, hypotheses, and theories that led to the development of quantitative models of drug-receptor interaction. Burkman.

Au Qtr. 3 cl. Prereq: Math 152 or equiv and an introductory course in pharmacology; or permission of instructor.

**871 Experimental Methods in Pharmacology G 3**

Qualitative and quantitative pharmacology covering the standard laboratory methods used in the screening and evaluation of drugs. Staff.

Wi Qtr. 1 cl, 2 3-hr lab. Prereq: 870 or equiv, and permission of instructor.

**872 Advanced Methods in Pharmacology G 3**

Theory and practical application of specialized pharmacological approaches used for the elucidation of mechanisms of drug action. Staff.

Sp Qtr. 1 cl, 2 3-hr lab. Prereq: 871 and permission of instructor.

**881 Advanced Topics in Pharmacology G 3**

A study of current advanced theories of pharmacodynamics. Staff.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 871 and permission of instructor.  
Repeatable to a maximum of 9 cr hrs.

**884 Field Experiences in Pharmaceutical Administration G 6**

Supervised practicum in an administrative setting within the pharmaceutical industry.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 25 cr hrs of course work in pharmacy administration and enrollment in pharmacy administration specialization. This course is graded S/U.

**894 Group Studies in Pharmaceutical Sciences G 1-5**

Group studies of selected topics in various fields of the pharmaceutical sciences.

Su, Au, Wi, Sp Qtrs. 1-5 cl, opt lab. Prereq: Permission of instructor.  
Repeatable to a maximum of 30 cr hrs.

**970 Supervised Project in Hospital Pharmacy G 3**

Investigation of a major problem facing a hospital pharmacy or pharmacy practice.

Su, Au, Wi, Sp Qtrs. Prereq: 2nd yr standing in hospital pharmacy specialization. Repeatable to a maximum of 9 cr hrs. Required of all students specializing in hospital pharmacy; must be taken each qtr of 2nd yr. This course is graded S/U.

**993 Individual Studies in the Pharmaceutical Sciences G 1-5**

Individual investigation of problems in one of the areas below:

A— Pharmaceutical Administration

B— Medicinal Chemistry and Pharmacognosy

C— Pharmaceutics and Pharmaceutical Chemistry

D— Pharmacology

E— Pharmacy Practice

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**999 Research in the Pharmaceutical Sciences G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Philosophy

350 University Hall, 230 North Oval Mall, 292-7914

**101 Introduction to Philosophy U 5**

Examination of major problems, such as the nature of reality, knowledge, truth, morality, and the relation of philosophy to science and religion.

Su, Au, Wi, Sp Qtrs. H101 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 100. BER/GEC/LAR course.

**130 Introduction to Ethics U 5**

The nature of right and wrong, good and evil; the grounds of moral choice and decision; the resolution of moral conflicts.

Su, Au, Wi, Sp Qtrs. H130 (honors) may be available to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course.

**150 Introduction to Logic U 5**

Deduction and induction: principles of clear statement and valid reasoning; fallacies; and the methods by which theories and laws are established.

Su, Au, Wi, Sp Qtrs. Prereq: Math 075 or 102 or equiv. BER/GEC/LAR course.

**215\* Asian Philosophies U 5**

A survey including at least three of the following major philosophical systems of Asia: Hinduism, Buddhism, Jainism, Zoroastrianism, Taoism, and Confucianism.

Wi Qtr. 5 cl.

**217+\* Fundamental Concepts of Existentialism U 5**

Key concepts of the movement: commitment, absurdity, freedom, and death, as expressed in the works of Nietzsche, Sartre, Camus, et al.

Wi Qtr. 5 cl. Not open to students with credit for 617.

**230 Political and Social Philosophy U 5**

Philosophical bases of social and political institutions and practices; analysis of such fundamental conceptions as rights, justice, equality, political obligation, and civil disobedience.

Au, Wi, Sp Qtrs. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. BER/GEC/LAR course.

**240 Aesthetics U 5**

Principal systems of aesthetics; interpretation of the creative activity of the artist, the work of art, and the contemplation and criticism of art objects.

Au, Wi, Sp Qtrs. H240 (honors) may be available to students enrolled in an honors program, or by permission of instructor. BER/GEC/LAR course.

**250 Symbolic Logic U 5**

A formal presentation of the elements of modern and classical deductive logic; decision and proof procedures in sentential logic, functional logic, and Aristotelian logic.

Au, Wi, Sp Qtrs. BER/GEC/LAR course.

**255 Introduction to the Philosophy of Science U 5**

A survey of the main philosophical problems relating to the natural sciences.

Au Qtr. 5 cl. Prereq: 5 cr hrs in logic or math above 104, and 5 cr hrs in natural science or permission of instructor. BER course.

**270 Introduction to Philosophy of Religion U 5**

A philosophical analysis of the nature of religion and the foundations of religious belief.

Au, Wi, Sp Qtrs. 5 cl. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. BER/GEC/LAR course.

**H276 Freshman-Sophomore Proseminar U 5**

Topic varies; emphasis on current philosophical problems.

Au, Wi, Sp Qtrs. Prereq: Fr or soph standing, and either a 3.00 CPHR, enrollment in an honors program, or permission of instructor. Not open to students with credit for H570. Repeatable to a maximum of 15 cr hrs with written permission of dept adviser.

**294† Group Studies U 1-5**

Groups of students are given an opportunity to pursue special topics not otherwise offered.

Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

**311 History of Ancient and Hellenistic Philosophy U 5**

Major figures and issues in Greek philosophy; presocratics, Socrates, Plato, Aristotle.

Au Qtr. Prereq: Philos major or 10 cr hrs of philos course work exclusive of 150 and 240; or permission of instructor. Not open to students with credit for 511.

**312 History of Philosophy from Augustine to Ockham U 5**

Major figures in medieval philosophy, including Augustine, Aquinas, Duns Scotus, and Ockham.

Wi Qtr. Prereq: Philos major or 10 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 512, or 614 taken prior to Su Qtr 1990.

**313 History of Philosophy: Early Modern Philosophy U 5**

Major figures in early modern philosophy: Descartes, Hobbes, Spinoza, Locke, and Berkeley.

Sp Qtr. Prereq: Philos major or 10 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 512 taken prior to Su Qtr 1990, or 513.

**314 History of Philosophy: Leibniz, Hume, and Kant U 5**

Major figures in European philosophy in the 17th and 18th centuries.

Wi Qtr. 5 cl. Prereq: Philos major or 10 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 514.

**315 History of Philosophy: 19th-Century Philosophy U 5**

Major figures in 19th-century German idealism.

Sp Qtr. 5 cl. Prereq: Philos major or 10 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 515.

**321\* Introduction to Jewish Philosophy U 5**

A general introduction to major figures and trends in medieval, modern, and contemporary Jewish philosophy; emphasis on Philo, Saadia, Maimonides, Spinoza, Mendelssohn, and Buber.

Wi Qtr. 5 cl. Not open to students with credit for 361.

**322† Jewish Mysticism U 5**

Introduction to issues and texts in the Jewish mystical tradition, with emphasis on the Zohar, Lurianic, Kabbalah, and Hasidism.

Sp Qtr. 5 cl. Not open to students with credit for 360.

**323† Judaism and Ethics U 5**

Examination of the relationships of ethics to religion in general and Judaism in particular, emphasizing the place of ethical reasoning within Judaism as a religious system.

Wi Qtr. 5 cl.

**368 Philosophical Problems in the Law U 5**

Introduction to the nature of law and the philosophical and moral problems concerning law; justification of civil disobedience, criminal punishment, plea bargaining, and the enforcement of morality.

Au Qtr. 5 cl.

**431 Ethical Theory U 5**

Advanced introduction to the major issues in ethical theory: the relation between value and obligation, the nature and justification of moral judgment, etc.

Au, Sp Qtrs. 5 cl. Prereq: Philos major, or 130 and 10 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 331.

**462 Introduction to Theory of Knowledge U 5**

Survey of main philosophical positions, concerning knowledge, justification, skepticism, and rationality.

Wi Qtr. 5 cl. Prereq: Philos major, or 15 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 362.

**463 Introduction to Metaphysics U 5**

Survey of main philosophical positions concerning the nature of reality, persons, freedom, identity, and causation.

Wi Qtr. 5 cl. Prereq: Philos major, or 15 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 363.

**464 Introduction to Philosophy of Mind U 5**

General introduction to the philosophy of mind, the mind-body problem, intentionality, and the nature of consciousness.

Sp Qtr. 5 cl. Prereq: Philos major, or 15 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 364.

**473 Introduction to Philosophy of Language U 5**

Survey of philosophical issues regarding the nature of linguistic representation and its role in thought and communication.

Au Qtr. 5 cl. Prereq: 250 and 10 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 373.

**518† Movements in 20th-Century Philosophy U G 5**

Three or more of the following Anglo-American and European philosophical movements will typically be surveyed: existentialism, philosophical analysis, positivism, marxism, pragmatism, linguistic philosophy.

Au Qtr. 5 cl.

**520† American Philosophy U G 3**

The development of American philosophy: puritanism, deism, transcendentalism, and pragmatism.

Au Qtr. Not open to students with credit for 613. BER/LAC course.

**525† Russian Philosophy U G 3**

Selected topics in the history of Russian philosophy: nihilism; anarchism; existentialism; slavophilism and Russian religious thought; philosophy of Dostoyevsky and Tolstoy.

Au Qtr. Prereq: English 110 or 111 or equiv, one course in the history of philos, and permission of instructor. Fulfills in part the ASC LAR advanced English composition requirement.

**532 Moral Problems of the Health Professions U G 5**

An examination of some moral problems that arise in the health professions, along with the codes, theories, and reasoning involved in their resolution.

Sp Qtr. 5 cl. Prereq: 130 and Comp St 305, or permission of instructor. Designed for students in medicine, nursing, clinical psych, social work, guidance and counseling, and the health professions.

**553† Theory of Rational Choice U G 5**

Introduction to the principles and methods of the theory of rational choice; with applications in the theory of knowledge; ethics, and social and political philosophy.

Wi Qtr. 5 cl. Prereq: Jr or above standing or permission of instructor.

**H570† Junior-Senior Proseminar U G 3-5**

Topics vary; emphasis on recent philosophical writing in some specific area or on some specific problem.

Sp Qtr. Prereq: 11 hrs in philos, and either 3.25 or better CPHR with 3.50 or better in philos, or permission of instructor. Repeatable to a maximum of 15 cr hrs with written permission of dept honors adviser.

**597 Issues of the Contemporary World U 5**

Prereq: Sr Standing. GEC/LAR course.

**H597.03 Interdisciplinary Perspectives on Current Issues**

Team-taught interdisciplinary and cross-cultural course on the relations among politics, ethics, rhetoric, and law as they confront current practical issues.

Sp Qtr. 2-2-hr cl. Not open to students with credit for English H597.03 or Polit Sc H597.03. Cross-listed in English and Political Science.



**General Prerequisites for Courses Numbered 600 and 700**

Not open to freshmen or sophomores. Unless otherwise indicated the prerequisites for 600- and 700-level courses are 10 hours in philosophy.

**612 Introduction to Cognitive Science U G 3**

Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.

Wi Qtr. 2 1/2-hr cl. Prereq: Permission of instructor or a total of 12 cr hrs from at least two of the following areas: cptr/inf, linguist, philos, and psych. Not open to students with credit for Cptr/Inf 612, Linguist 612, or Psych 612 or 794 (Sp Qtr 1989) or 794A (Wi Qtr 1990). Cross-listed in Computer and Information Science, Linguistics, and Psychology.

**614+ Medieval Philosophy U G 5**

An examination of the main philosophical traditions of the Middle Ages, based on a study of philosophers such as Abelard, Aquinas, Scotus, and Ockham.

Sp Qtr. Prereq: English 110 or 111 or equiv, and 10 cr hrs in philos including 511, or 712 and 713. Not open to students with credit for 714. Fulfills in part the ASC LAR advanced English composition requirement.

**615\* Pragmatism U G 5**

An examination of the main themes of pragmatism: pragmatic theories of truth, reality, nature of physical objects, knowledge of reality, and normative matters.

Wi Qtr.

**617+ Existentialism U G 5**

Existentialist tradition from its sources in authors such as Kierkegaard and Nietzsche to its phenomenological forms as expressed in writings by Heidegger and Sartre.

Wi Qtr. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**621+ Topics in Jewish Philosophy U G 5**

An examination of a philosophical issue in Jewish thought or of the thought of a particular author; topics vary.

Wi Qtr. Prereq: 260 or 261, or equiv with written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**625 Marxist Philosophy U G 3**

Philosophical principles of classical Marxism; with an examination of one or more of the following additional topics: Marx's early writings, Soviet Marxism, present Western Marxism.

Wi Qtr. Prereq: 1 course in the history of philos or permission of instructor.

**630 Advanced Political and Social Philosophy U G 5**

An intensive examination of issues in political and social philosophy, including democracy, civil disobedience, anarchism, totalitarianism, nature of the state, etc.

Au Qtr. Prereq: 230 or permission of instructor, and English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**631 Advanced Ethical Theory U G 5**

An intensive examination of representative ethical systems such as egoism, hedonism, intuitionism, and utilitarianism.

Wi Qtr. Prereq: 130.

**633 Environmental Ethics U G 5**

Examination of the moral issues generated by the impact of human beings on the natural environment.

Wi Qtr. 2 2-hr cl. Prereq: 130 or permission of instructor.

**641+ Advanced Esthetic Theory U G 5**

Basic issues in philosophy of art: the definition of art; meaning, truth, and representation in art; the nature and basis of criticism; the criteria of interpretation of works of art.

Sp Qtr.

**650 Advanced Symbolic Logic U G 5**

Introduction to the metatheory of first-order logics and languages: axiomatic development of propositional and predicate logic; model theory; soundness, completeness, and Lowenheim-Skolem theorems.

Wi Qtr. Prereq: 250.

**652+ Nonclassical Logic U G 5**

Study of selected systems of nonclassical logic, such as entailment systems, modal, many-valued, epistemic, deontic, imperative, erotetic, tense, and free logics.

Sp Qtr. Prereq: 650. Repeatable to a maximum of 10 cr hrs.

**653+ Inductive Logic and Probability U G 5**

An analysis of selected systems of inductive inference; the probability calculus and its interpretations; confirmation theory.

Au Qtr. Prereq: 150 or permission of instructor.

**660 Theory of Knowledge I U G 5**

A survey of major epistemological problems: the possibility, origin, foundation, structure, methods, limits, types, and validity of knowledge.

Au Qtr. Prereq: 250 or permission of instructor.

**663 Metaphysics I U G 5**

A survey of major metaphysical problems: categories, universals, substance and process, causality and law, space and time, metaphysical presuppositions of knowledge.

Wi Qtr. Prereq: 250 or permission of instructor.

**668\* Philosophy of Law U G 5**

An examination of the nature and function of law and of such problems as the relation of law to morality and the justification of punishment.

Sp Qtr. 3 cl. Prereq: 230 or 368, and English 110 or 111 or equiv; or permission instructor. Fulfills in part the ASC LAR advanced English composition requirement.

**672+ Philosophy in Literature U G 5**

Philosophical problems as reflected in classics of literature, such as the Greek dramatists, Shakespeare, Voltaire, T. S. Eliot, Proust, and Tolstoy.

Sp Qtr. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement.

**673 Philosophy of Language U G 5**

Basic problems and results in the philosophy of language, concentrating on theories of reference, theories of meaning, and theories of language-use (speech-acts, implicature, etc.).

Wi Qtr. Prereq: 250 or permission of instructor.

**674+ Philosophy of Logic and Mathematics U G 5**

Analysis of basic concepts used in logic and in philosophical claims about logic and mathematics, such as: proposition, logical truth, mathematical objects, and necessity.

Au Qtr. Prereq: 650.

**675 Philosophy of Religion U G 5**

A study of religious concepts and problems; the idea and nature of God, of humans, their relation to the world and human destiny.

Sp Qtr.

**676 Philosophy of Science U G 5**

A study of the nature and structure of scientific concepts, laws, and theories; appraisal of methodologies, presuppositions, and frames of reference in science.

Au Qtr. 2 2-hr cl or 5 cl. Prereq: One course is philos above the 100-level.

**677+ Conceptions and Methods of the Social Sciences U G 3**

Philosophic assumptions of social science: nature of explanation (methodological individualism, holism, functionalism); methods in natural and behavioral science; fact and value in social inquiry.

Wi Qtr.

**693 Individual Studies U G 1-10**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Students ordinarily earn from 1 to 5 cr hrs, but honors students may earn up to 10 cr hrs. This course is graded S/U.

**694+ Group Studies U G 1-15**

Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 First-Year Seminar G 5**

A topically variable introduction to advanced philosophical methodology.

Au Qtr. 1 3-hr cl. Open only to first-year philosophy grad students.

**701\* Studies in Medieval Philosophy U G 5**

An intensive examination of a major philosopher or philosophical problem of the period; topics vary from quarter to quarter.

Sp Qtr. Prereq: 10 cr hrs in philos including 511 or 614; or equiv with written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**702 Studies in 17th-Century Philosophy U G 5**

An intensive examination of a major philosopher or philosophical problem of the rationalist period; topics vary from quarter to quarter.

Au Qtr. Prereq: 10 cr hrs of philos including 512 or equiv with written permission of instructor. Repeatable to a maximum of 15 cr hrs.

## 274 Philosophy

### 703† Studies in 18th-Century Philosophy U G 5

An intensive examination of a major philosopher or philosophical problem of the period; topics vary from quarter to quarter.

Wi Qtr. Prereq: 10 cr hrs in philos including 512, or equiv with written permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 704\* Studies in 19th-Century Philosophy U G 5

An intensive examination of a major philosopher or philosophical problem of the period; topics vary from quarter to quarter.

Sp Qtr. Prereq: 10 cr hrs in philos including 513, or equiv with written permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 712\* Philosophy of Plato U G 5

Wi Qtr. Prereq: 10 cr hrs in philos including 511.

### 713† Philosophy of Aristotle U G 5

Wi Qtr. Prereq: 10 cr hrs in philos including 511.

### 722\* Kant: Critique of Pure Reason U G 5

An intensive examination of Kant's epistemology as expounded in Kant's first *Critique*.

Sp Qtr. Prereq: 10 cr hrs in philos including 514.

### 737 Proseminar in Cognitive Science U G 2

An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Sp Qtr. 1 2-hr cl. Prereq: Cptr/Inf 612, Linguist 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial Systems Engineering, Linguistics, Psychology, and Speech and Hearing Science.

### 750† Advanced Logical Theory U G 5

Topics include formal arithmetic, recursive functions, Turing machines, Godel's incompleteness theorems, Church's thesis, arithmetical truth, logical paradoxes, and higher-order logic.

Sp Qtr. 3 cl. Prereq: 250 and 650. Repeatable to a maximum of 15 cr hrs.

### 753† Theory of Rational Choice U G 5

An intensive study of classical and contemporary approaches to rational decision making of individuals and groups; topics vary.

Au Qtr. 2 2-hr cl. Prereq: 250 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 761† Theory of Knowledge II U G 5

An intensive study of a systematic epistemological treatise or issue.

Au Qtr. Prereq: 660 or permission of instructor.

### 764\* Metaphysics II U G 5

An intensive study of a systematic metaphysical treatise or issue.

Sp Qtr. Prereq: 663 or permission of instructor.

### 767† Philosophy of Mind U G 5

Classical and contemporary approaches to the nature of mind, mind-body, other minds, intentionality, and other problems.

Sp Qtr.

### 770\* Advanced Studies in Philosophy U G 3-5

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 21 cr hrs.

### 771† Selected Topics in Analytic Philosophy U G 5

Origins of modern analytical philosophy; major writings of its founding fathers, beginning in 1879 with Frege's "Conceptual Notation" and culminating in 1922 with Wittgenstein's *Tractatus*.

Sp Qtr. Prereq: 150 and 518. Repeatable to a maximum of 21 cr hrs.

### 776\* Problems in Philosophy of Science U G 5

Detailed and critical examination of significant contributions to the traditional and contemporary philosophical literature on the philosophy of science.

Wi Qtr. Prereq: 250 or permission of instructor.

### H783 Honors Research U 3-5

A program of reading arranged for each student, with individual conferences, reports, and papers.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the philos courses taken and with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the BA with distinction in philos. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### General Prerequisites for Courses Numbered 800 and 900

Unless otherwise indicated the prerequisites for 800- and 900-level courses are acceptable foundation courses either in general philosophy, logic and ethics, or history of philosophy, and in some cases in all these subjects.

### 811\* Seminar in the History of Philosophy G 5

Au, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

### 830\* Seminar in Value Theory G 5

Au, Wi, Sp Qtr. Repeatable to a maximum of 15 cr hrs.

### 850† Seminar in Logic G 5

Sp Qtr. Repeatable to a maximum of 15 cr hrs.

### 861† Seminar in Theory of Knowledge G 5

Su Qtr. Repeatable to a maximum of 15 cr hrs.

### 864† Seminar in Metaphysics G 5

Au Qtr. Repeatable to a maximum of 15 cr hrs.

### 873\* Seminar in Philosophy of Language G 5

Au Qtr. Repeatable to a maximum of 15 cr hrs.

### 899 Interdepartmental Seminar G 3-5

Two or more departments present seminars on subjects of mutual interest; topics to be announced.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

### 993 Individual Studies G 2-15

Doctoral students may register for individual study in areas not normally covered by courses.

Su, Au, Wi, Sp Qtrs. Prereq: An MA degree or at least 50 cr hrs of grad study, and permission of dept chairperson. This course is graded S/U.

### 999 Research in Philosophy G Arr

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Photography and Cinema

Photography courses are now housed in the Department of Art, selected cinema courses in the Department of Theatre, and film studies in the Department of History of Art.

## Physical Education

### School of Health, Physical Education, and Recreation

The areas of specialization in physical education and the courses comprising these areas are listed below:

#### Adapted Physical Activity

341 Larkins Hall, 337 West 17th Avenue, 292-6226

182.03, 504, 631.20, 653, 662, 676, 692, 693, 694, 698, 727, 762, 872, 889, 995A, 999

#### Exercise Science

129 Larkins Hall, 337 West 17th Avenue, 292-6887

209, 360, 414, 650, 660, 661, 664, 665, 666, 667, 692, 693, 694, 760, 800, 801, 802, 803, 860, 867, 886, 889, 894, 995D, 995L, 999

#### Teacher Education

305 Pomerene Hall, 1760 Neil Avenue, 292-5679

208, 211, 212, 213, 214, 215, 216, 231, 232, 233, 289.01, 323, 441, 489.02, 489.05, 489.07, 489.08, 501, 502, 503, 504, 505, 506, 540, 541, 586, 587, 647, 692, 693, 694, 751, 831, 851, 870, 871, 874, 876, 880, 889, 894, 995C, 995I, 995L, 999

#### Sport, Leisure, and Somatic Studies

246 Larkins Hall, 337 West 17th Avenue, 292-6538

221, 230, 240, 260, 261, 262A-E, 264, 289.02, 289.03, 293, 294, 448, 489.09, 530, 610, 620.01-620.06, 620.08-620.12, 620.14, 621, 622, 623, 625, 628, 630, 631, 642, 648, 692, 693, 694, 731, 805, 806, 809, 810, 811, 830, 832, 841, 842, 873, 875, 881.01, 881.02, 889, 894, 995B, 995E, 995F, 995G, 995J, 995K, 995L, 999

#### Sport Management

441 Larkins Hall, 337 West 17th Avenue, 292-7701

692, 693, 694, 805, 806, 807, 808, 809, 830, 881, 889, 995B, 999

#### Graduate Studies

215E Pomerene Hall, 1760 Neil Avenue, 292-6787

#### Basic Instruction

344 Larkins Hall, 337 West 17th Avenue, 292-2504

All 100- and 200-level courses are open to all University students with the exception of 211-216, 231-233 and 289.01 and 289.06 which are reserved for students intending to major in physical education or recreation education.

The minimal requirement for 600 and 700 level courses is junior standing.

Preregistration with the dept is required for 139, 140, 161, 289 and 293. Preregistration must be completed before schedule is filed.

Unless otherwise specified all equipment is furnished. Students must provide clothing suitable for the activity and bring it to the first class meeting along with their schedule and I.D. card.

**137 Sport for the Spectator U 3**

A study of the great American spectator sports including football, basketball, baseball, ice hockey, golf, tennis, and others which meet the interests of the class.

1 2-hr cl, 1 2-hr lab.

**139 Introductory Program of Outdoor Pursuits U 1**

A study of and participation in the skills and knowledges of various sports and outdoor recreational activities in a natural setting.

Minimum of 6 cl and 24 lab hrs. Arr. Not open to students who have completed a corresponding subdivision of 140. Preregistration with department required. Travel and subsistence costs for activities will be borne by the student. These courses are graded S/U.

**139.01 Scuba II**

Introduction to fresh water diving.

Prereq: 179 or equiv. Student must provide wetsuit (rentals may be available).

**139.02 Whitewater Rafting U 1**

Introduction to basic whitewater rafting, including: river reading, paddling techniques, equipment, trip planning, and safety.

6 cl hrs, 24 lab hrs, arr trip. Prereq: Student must provide sleeping bag and appropriate clothing for river conditions.

**139.03 Backpacking I**

Introduction to basic backpacking techniques, equipment, wilderness travel, emergency procedures, and environmental awareness.

Student must provide sleeping bag and hiking boots.

**139.04 Cycling I**

Introduction to cycle touring with an emphasis on safety, equipment repair, maintenance, and trip planning.

Student must provide bicycle and sleeping bag.

**139.05 Winter Backpacking**

Designed for the experienced backpacker and covers winter camping, clothing, travel techniques, and advanced first aid.

Prereq: 139.03 or previous backpacking experience. Student must provide sleeping bag and hiking boots.

**139.06 Skiing**

Alpine and/or cross country skiing with instruction appropriate to various ski levels.

Prereq: Ski experience desirable. Repeatable to a maximum of 3 cr hrs. Student must provide boots, poles and skis (rentals available).

**139.07 Experimental Sections**

Activities will be announced and publicized whenever an experimental section is deemed worthy of trial.

**139.08 Canoeing II**

Use of canoeing skills on an overnight trip or on several day trips in the area.

Prereq: Small craft 177.02 or equiv. Student must provide sleeping bag on overnight trip.

**139.09 Caving I**

Introduction to basic caving techniques, equipment, trip planning, and safety; cave related ecology, flora, and fauna will also be emphasized.

Student must provide sleeping bag.

**139.10 Lightweight Backpacking**

Advanced backpacking activities including navigation, rope handling skills, and survival techniques.

Prereq: 139.03 or previous backpacking experience. Not open to students with credit for 140.05. Student must provide sleeping bag and hiking boots.

**139.11 Rock Climbing**

Basic rock climbing techniques, rope handling, and safety systems will be covered.

Prereq: Good physical condition. Students must provide sleeping bag, appropriate footgear for the climbing trip and a 20' length of new 1" nylon webbing.

**139.12 Beginning Trap Shooting**

An introductory course covering equipment selection and maintenance, shooting techniques, scoring, safety, and the opportunities for lifetime involvement.

Cost of ammunition and targets must be borne by the student.

**139.13 Orienteering**

Introduction to the sport of orienteering involving compass skills, map reading, and cross-country travel; cross-country racing in its competitive form.

Student must provide compass and bear transportation costs.

**139.15 High Ropes Course U 1**

A series of high ropes course experiences on challenging and formidable obstacles 25 to 40 feet above ground.

1 2-hr cl, 4-5 hrs field experience. Participants should be physically fit. A nominal lab fee will be assessed to cover the cost of using the ropes courses and insurance. Students must provide own transportation.

**139.16 Small Bore Outdoor Prone Rifle Shooting U 1**

A continuation of 171.01 and 171.02 in the sport of outdoor prone shooting as practiced locally and nationally.

Arr. Prereq: 171.01 or 171.02 or permission of instructor. Repeatable to a maximum of 2 cr hrs. Fee for supplies required. This course is graded S/U.

**140 Outdoor Pursuits Program U 3**

A study of and participation in the skills and knowledge of various sports and outdoor recreational activities in a natural setting.

Minimum of 5 3-hr training sessions; minimum of eight trip days. Repeatable to a maximum of 12 cr hrs; subdivisions may not be repeated. Preregistration with dept is required.

**140.03 Backpacking II**

Opportunity for practice in advanced camping and outing skills on an extended trip.

Prereq: Backpacking I or prior backpacking experience.

**140.07 Experimental Sections**

Activities deemed worthy of developing on an experimental basis; activities will be announced and published when course is offered.

**141 Adapted Physical Education Activities U 1**

Special sections of conditioning and sport activities open only to students with temporary or permanent physical disabilities which would prevent their participation in regular classes.

2 lab hrs arr. Repeatable to a maximum of 12 cr hrs. Offerings to be announced quarterly. Students register for desired section using alphabetical designation.

- A— Archery
- B— Badminton
- D— Bowling
- E— Special Conditioning
- F— Golf
- G— Riflery
- H— Basic Swimming
- I— Table Tennis
- J— Tennis
- K— Self Defense

**142 Archery**

Repeatable to a maximum of 3 cr hrs; subdivisions not repeatable.

**142.01 Archery I U 1**

Introductory skills and knowledges essential for target shooting.

2 lab hrs arr.

**142.02 Archery II U 1**

Continuation of 142.01, refining shooting techniques with emphasis on archery as a lifetime leisure pursuit.

2 cl. Prereq: 142.01 or permission of instructor.

**143 Badminton U 1**

2 lab hrs arr. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable.

**143.01 Badminton I**

Beginning skills and knowledge essential for playing badminton.

**143.02 Badminton II**

Continuation of 143.01 with emphasis on advanced strategy in doubles and singles; intermediate skills.

2 lab hrs arr. Prereq: 143.01 or equiv racquet sport experience.

**144 Basketball U 1**

Skill and strategy necessary for playing basketball.

2 lab hrs arr. Prereq: Previous playing experience. Those with varsity experience should elect 631.02. Registration must include letter designation.

A—Women

B—Men

**145 Bowling U 1**

2 lab hrs arr. Repeatable to a maximum of 3 cr hrs; subdivisions not repeatable. Students must provide bowling shoes (rentals available) and have ID card.

**145.01 Bowling I**

Introductory skills and knowledge essential for bowling.

**145.02 Bowling II**

Emphasis on improving the average through increased efficiency in the use of the hook ball and spot bowling.

Prereq: 145.01 or ability to average at least 125.

**145.03 Bowling III**

Advanced skills necessary for competitive bowling.

Prereq: 145.02 or ability to average over 150 with a hook ball.

**146 Boxing for Beginners U 1**

Fundamentals of boxing.

2 lab hrs arr.

**147 Conditioning Activities U 2**

Lecture material covering principles of conditioning is applied in the activity section which the student elects.

1 cl, 3 1-hr lab. Register for desired laboratory sections using alphabetical designation.

A— Circuit Training

C— Jogging

F— Swimming--Prereq: 178.03 or equiv.

G— Weight Training

H— Diet and Exercise

J— Rhythmic Aerobics

**148 Lifetime Fitness Programs U 1**

Continued application of the principles covered in 147.

3 1-hr labs. Prereq: 147. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable. Register for desired laboratory section using alphabetical designation.

A— Circuit Training

C— Jogging

F— Swimming--Prereq: 178.03 or equiv.

G— Weight Training

H— Diet and Exercise

J— Rhythmic Aerobics

**150 Advanced Strength and Conditioning U 3**

Strength and power training; advanced anaerobic and speed conditioning.

4 2-hr cl. Prereq: Permission of instructor based on past strength training and experience and current conditioning level as determined by pretest. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**153 Recreational Dance Forms**

Beginning, intermediate, and advanced level courses in social dance and folk/square dance; *women register for "A" sections, men for "B" to insure even pairing.*

VPA Admis Cond course.

**153.01 Social Dance I U 1**

Introduction to basic steps and variations of selected standard social dances including foxtrot, waltz, swing, cha-cha, rumba, and tango.

1 2-hr cl.

**153.02 Social Dance II U 2**

Continuation of 153.01 with emphasis on style and technique; introduction of additional social dance contents.

2 2-hr cl. Prereq: 153.01.

**153.03 Social Dance III U 2**

Advanced social dance skills and techniques with increased emphasis on design and development of steps and variations; a performance project is required.

2 2-hr cl. Prereq: 153.02. Repeatable to a maximum of 4 cr hrs.

**153.05 Folk and Square Dance I U 1**

Introduction to basic folk and square dance steps and patterns.

1 2-hr cl.

**153.06 Folk and Square Dance II U 2**

Continuation of 153.05 with additional instruction in New England contra dancing and clogging; rhythmical acuity and correct styling are stressed.

2 2-hr cl. Prereq: 153.05 or equiv.

**153.07 Folk and Square Dance III U 2**

Advanced level square and folk dance focusing on performance and choreography; square dance calling and folk dance choreography are taught; a live performance, designed and performed by students will culminate the quarter's study.

2 2-hr cl. Prereq: 153.05, 153.06, or equivs. Repeatable to a maximum of 4 cr hrs.

**154 Fencing**

Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable.

**154.01 Fencing I U 1**

Fundamentals of foil fencing.

2 lab hrs arr.

**154.02 Fencing II U 1**

Continuation of 154.01 with emphasis on the bout.

2 lab hrs arr. Prereq: 154.01 or equiv.

**154.03 Fencing III U 2**

Intermediate-advanced skills of foil fencing; introduction to epee and sabre; students will begin specializing in one weapon.

4 lab hrs arr. Prereq: 154.02 or 154.04 or equiv.

**156 Football U 1**

Fundamental skills of touch football.

2 lab hrs arr.

**156.03 Flag Football**

Co-ed sections for experienced touch football players.

**157 Golf U 1**

2 lab hrs. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable.

**157.01 Golf I**

Introductory skills and knowledge preparatory to course play with emphasis on irons.

**157.02 Golf II**

Continuation of 157.01 with emphasis on woods and on introduction to course play.

Prereq: 157.01 or equiv. Advanced players should elect 631.06.

**158 Gymnastics U 1**

Development and practice of gymnastic skills.

2 lab hrs arr. Subdivisions 158.01 and 158.04 not repeatable.

**158.01 Women's Gymnastics I**

Introduction to the four Olympic gymnastic events for women: floor exercise, vaulting, beam, and uneven parallel bars.

2 cl.

**158.02 Women's Gymnastics II**

Continuation of 158.01.

2 cl. Prereq: 158.01 or previous experience. Repeatable to a maximum of 2 cr hrs.

**158.04 Men's Gymnastics I**

Introduction to the six Olympic gymnastics events for men: floor exercise, side horse, rings, vaulting, parallel bars, and horizontal bar.

2 cl.

**158.05 Men's Gymnastics II**

Continuation of 158.04.

2 cl. Prereq: 158.04 or previous experience. Repeatable to a maximum of 2 cr hrs. Advanced students should elect 631.05.

**161 Horseback Riding U 1**

3 lab hrs arr. Repeatable to a maximum of 3 cr hrs; subdivisions not repeatable. Travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Offered only when arrangements can be made with local stables. Preregistration with dept required. These courses are graded S/U.

**161.01 Horseback Riding I**

Fundamental skills and knowledge essential for safe riding.

**161.02 Horse back Riding II**

Continuation of 161.01 with emphasis on improved form and control of the horse.

Prereq: 161.01 or knowledge of canter leads and ability to post diagonals.

**161.03 Horseback Riding III**

Introductory skills of jumping with stress on hunt seat and low jumps.

Prereq: 161.02 or equiv.

**162 Ice Skating**

Basic skills of ice skating.

Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable. Students must provide skates (rentals available).

**162.01 Ice Skating I U 1**

Fundamentals of balance, movement, and safety on the ice; forward, backward, and stopping. Guidance in choice, use and care of equipment.

2 lab hrs arr. Open only to beginners. This course is graded S/U.

**162.02 Ice Skating II U 1**

Elementary skating with emphasis on correct technique for basic skills.

2 lab hrs arr. Prereq: 162.01 or ability to skate forward, backward, and stop with no balance problems.

**162.03 Ice Skating III U 2**

Power skating: designed for persons having had more than 30 hrs on ice and who can execute the basic strokes (including back crossovers) with correct techniques.

4 lab hrs. Prereq: 162.02 or 162.04 or equiv skill level.

**163 Figure Skating**

Figure skating skills and techniques including the elements of free skating and compulsory figures.

Repeatable to a maximum of 5 cr hrs; subdivisions not repeatable. Students must provide figure skates (no rentals). VPA Admis Cond courses.

**163.01 Figure Skating I U 2**

Lectures: survey of figure skating includes history, types of competition, judging, recreational, and show skating. Lab: introduction to free skating, compulsory figures, and dance skating.

1 cl, 3 lab hrs. Prereq: 162.03 or permission of instructor.

**163.02 Figure Skating II U 2**

Intermediate and advanced freestyle; intermediate: all single jumps, basic spins, and advanced footwork; advanced: jump combinations, spin combinations, and double jumps.

3 lab hrs arr. Prereq: 163.01 or permission of instructor.

**163.05 Competitive Figure Skating U 2**

Compulsory figures and freestyle designed to prepare skater for United States Figure Skating Association tests and competitions.

2 2-hr cl. Prereq: 163.02 or permission of instructor.

**163.06 Precision Team Skating U 1**

Introduction to team skating, including learning of basic holds and basic formations and participating in a group four-minute program to music.

1 2-hr cl. Prereq: 162.02 or permission of instructor. Students must be able to skate forward and backward with ease, have good balance, and be able to stop. Repeatable to a maximum of 3 cr hrs. Figure skates required; rentals are available. There will be one performance outside of class.

**164 Ice Hockey U 1**

Fundamental skills and knowledges essential for playing ice hockey.

2 lab hrs arr. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable. Students must provide hockey skates (rentals available).

**164.01 Ice Hockey I**

Introductory skills and techniques of ice hockey.

Prereq: 162.02 or equiv. Open only to beginners.

**164.03 Ice Hockey II**

Intermediate-advanced play.

Prereq: 164.01 or previous playing experience.

**168 Movement and Self Awareness U 1**

Student's natural movement vocabulary is explored and extended through movement experiences designed to heighten self and social awareness; creative rather than imitative approach is used.

2 lab hrs arr.

**169 Martial Art Forms**

An exploration and orientation to Eastern movement martial art forms.

2 lab hrs arr. Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable.

**169.01 Aikido U 1**

An introduction to a harmonizing martial art, designed to increase physical and mental centeredness; to improve grace, balance, awareness, and general movement abilities; to aid in self defense.

Not open to students with credit for 186.04.

**169.02 Aikido II U 2**

Intermediate skills, techniques, and practice of Aikido; acquaintance with and development of an understanding of rank and examination requirements.

2 2-hr cl. Prereq: 169.01, 6th kyu rank, or permission of instructor.

**169.04 Judo I U 1**

Introductory skills and knowledge essential in throwing techniques and mat work of Judo.

Not open to students with credit for 165.01 or 165.04.

**169.05 Judo II U 2**

Intermediate skills and techniques of Judo as well as an introduction to the skills involved in competitive Judo.

2 2-hr labs. Prereq: 165.04 or equiv or certified Gokyu by National Collegiate Judo Association. Not open to students with credit for 165.02 or 165.05.

**169.06 Judo III U 2**

Advanced skill acquisition in techniques of sport Judo and experience in competitive Judo.

2 2-hr labs. Prereq: 165.05 or equiv or certified Yonkyu by National Collegiate Judo Association. Not open to students with credit for 165.03

**169.07 Karate I U 1**

Introduction of the fundamental forms and techniques of Karate.

2 lab hrs. Not open to students with credit for 166.01

**169.08 Karate II U 2**

The refinement of basic forms and techniques and the introduction of advanced forms; more emphasis on free fighting.

4 lab hrs arr. Prereq: 165.01 or equiv. Not open to students with credit for 166.02.

**169.10 Shuai Chiao U 1**

Introduction to the various forms and techniques of Shuai Chiao—Chinese wrestling, a combination of Karate and Judo. Not open to students with credit for 186.03.

2 lab hrs arr.

**169.11 Shuai Chiao II U 2**

Intermediate forms and techniques of Shuai Chiao as well as an introduction to the skills involved in competitive Shuai Chiao.

2 cl. Prereq: 169.10 or equiv or certified fifth Chieh by International Shuai Chiao Association. Repeatable to a maximum of 4 cr hrs. Not open to students with credit for 186.05.

**169.13 Tae Kwon Do I U 1**

Beginning course in the Korean martial art form; includes etiquette, basic blocking, thrusting and kicking techniques, and self defense.

2 cl. Not open to students with credit for 166.01.

**169.14 Tae Kwon Do II U 2**

Continuation of Tae Kwon Do I, refinement of technique and form; introduction of intermediate forms and skills, breaking, and conditioning techniques.

2 2-hr cl. Prereq: 169.13.

**169.16 T'ai Chi Ch'uan U 1**

An introduction to T'ai Chi Ch'uan with emphasis on an exploration of body/energy awareness.

Not open to students with credit for 186.01.

**169.17 T'ai Chi Ch'uan II U 1**

Intermediate forms and techniques of T'ai Chi Ch'uan and experience in joint hands operation as well as in combat T'ai Chi Ch'uan.

2 lab hrs arr. Prereq: 186.01 or equiv. Not open to students with credit for 186.02.

**169.18 T'ai Chi Ch'uan III U 2**

Further development of the form practiced in T'ai Chi Ch'uan II; principles of breath control, mediation, and self massage are introduced.

2 2-hr cl. Prereq: 169.17. Repeatable to a maximum of 4 cr hrs.

**170 Racquetball**

Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable.

**170.01 Racquetball I U 1**

Beginning skills and knowledge for students with no prior experience in racquetball.

2 lab hrs arr.

**170.02 Racquetball II U 1**

Continuation of 170.01 with emphasis on strategy and the playing of singles.

2 lab hrs arr. Prereq: 170.01 or equiv.

**170.03 Racquetball III U 2**

Participation in both singles and doubles with emphasis on strategy and competition.

4 lab hrs arr. Prereq: 170.02 or equiv.

**171 Riflery U 1**

1 2-hr lab. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable.

**171.01 Riflery I**

Introduction to target shooting techniques in the prone and standing positions.

**171.02 Riflery II**

A continuation of 171.01 stressing the other shooting positions.

Prereq: 171.01 or Mil Sci 112 or equiv.

**171.03 International Air Pistol Target Shooting**

Introduction to the sport of international air pistol shooting.

1 2-hr cl.

**172 Self Defense U 1**

Skills and understandings essential to defend oneself against an aggressor with emphasis on avoiding attack.

2 lab hrs arr.

**174 Soccer U 1**

Techniques and knowledge essential for playing soccer.

2 lab hrs arr. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable.

**175 Softball U 1**

Skills and knowledge necessary for playing softball.

2 lab hrs arr. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable.

**175.02 Women's Slo Pitch II**

Prereq: 175.01 or 175.03 or intermediate level skills. Not open to students with credit for 175.04.

**175.07 Men's Slo Pitch II**

Prereq: 175.06 or intermediate skills.

**177 Small Craft Operation**

Introduction to the operation of various types of small craft; emphasis on basic skills and safety procedures.

Prereq: Swim a minimum of 100 yards without stopping. Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable.

**177.02 Canoeing I U 1**

Basic paddling skills.

2 lab hrs arr. Open to students with little or no canoeing experience. See 139 and 140 for additional offerings.

**177.04 Instructorship in Small Craft U 2**

Designed to lead to certification with the American Red Cross in canoeing.

4 lab hrs arr. Prereq: 177.02 or equiv.

**178 Swimming and Diving U 2**

Fundamental swimming and diving skills with emphasis on personal safety. 4 lab hrs arr. Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable. Student must provide bathing suit. See 147 and 148 for swim conditioning.

**178.01 Swimming I**

Beginning swimming.

Open only to non-swimmers and students with no deep water experience. This course is graded S/U.

**178.02 Swimming II**

Elementary swimming skills for those who can swim in deep water but no farther than 2 pool lengths (50 yards).

**178.03 Swimming III**

Intermediate skills for those who can swim at least 100 yards using the front crawl and at least 2 other strokes.

Prereq: 178.01 or equiv.

**179 Skin and Scuba Diving U 3**

Skills and knowledge essential for safe diving and preparation for open water checkout dives.

2 cl, 2 lab hrs arr. Prereq: Ability to swim 1/2-mile in 10 min. Student must provide bathing suit and bear cost of required special scuba medical exam. See 139 and 140 for additional offerings.

**180 Springboard Diving**

Prereq: 178.02 or equiv. Repeatable to a maximum of 3 cr hrs; subdivisions not repeatable. Student must provide bathing suit.

**180.01 Springboard Diving I U 1**

Fundamentals of diving from the one meter (low) board.

2 lab hrs arr.

**180.02 Springboard Diving II U 2**

Intermediate diving skills.

4 lab hrs arr. Prereq: 180.01 or the ability to perform the following dives: front, back, inward, 1/2 twist, somersaults (front and back).

**181 Synchronized Swimming U 1**

2 lab hrs arr. Prereq: 178.03 or equiv. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable. Student must provide bathing suit. VPA Adms Cond courses.

**181.01 Synchronized Swimming I**

Skills necessary for basic synchronized swimming.

**182 Life Saving and Water Safety**

Repeatable to a maximum of 12 cr hrs; subdivisions are not repeatable. Student must provide bathing suit.

**182.01 Basic and Emergency Water Safety U 1**

Designed to lead to American Red Cross basic and emergency water safety certificate.

2 hrs lab, arr. Prereq: 178.02 or equiv.

**182.02 Water Safety Instructors U 3**

Designed to lead to certification as an American Red Cross Water Safety Instructor.

2 cl, 2 hrs lab, arr. Prereq: Unexpired Emergency Water Safety or Lifeguard Training certificate and 178.03 or equiv. Introduction to Health Services Education materials will be included in the course.

**182.03 Adapted Aquatic Instructor U 2**

Designed to lead to certification as an American Red Cross Adapted Aquatic Instructor.

1 cl, 1 2-hr lab. Prereq: Current ARC Water Safety Instructor's certificate or permission of the instructor.

**182.04 Pool and Beach Operation U 3**

Operational aspects including office and personnel, budgeting, public relations, recreation and safety, equipment operation and maintenance, water filtration, recirculation, and sanitation.

3 cl. Prereq: Unexpired ARC Water Safety Instructorship or concurrent registration in 182.02.

**182.05 Lifesaving and Water Safety: Lifeguard Training U 2**

Designed to lead to American Red Cross Lifeguard certification.

Au, Wi, Sp Qtrs. 4 lab hrs, arr. Prereq: Unexpired standard first aid and cardiopulmonary resuscitation certificates and 178.03 or equiv. The ability to demonstrate appropriate aquatic skills will be tested early in the course.

**182.06 Lifesaving and Water Safety: Lifeguard Instructor U 1**

Designed to lead to American Red Cross Lifeguard Instructor certification.

1 2-hr lab. Prereq: Unexpired Lifeguarding certificate. The ability to demonstrate appropriate aquatic skill will be tested early in the course. Introduction to health services education will be included.

**183 Water Polo U 2**

Introductory skills and knowledge essential in the sport of water polo.

4 lab hrs arr. Prereq: 178.03 or equiv. Student must provide bathing suit.

**185 Table Tennis U 1**

2 lab hrs arr. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable.

**185.01 Table Tennis I**

Beginning skills and knowledge essential for playing table tennis with emphasis on the use of backspin and topspin in the singles game.

**185.02 Table Tennis II**

Continuation of 185.01 with emphasis on advanced strokes and their application in the playing of singles and doubles.

Prereq: 185.01 or the ability to do backspin and topspin serves.

**188 Tennis**

Skills and knowledge essential in playing tennis.

Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable. Student must provide racket and 6 balls; advanced students should elect 631.10.

**188.01 Tennis I U 1**

Beginning skills; forehand, backhand, and serve—singles play.

2 lab hrs arr.

**188.02 Tennis II U 1**

Elementary skills; introduction to doubles play.

2 lab hrs arr. Prereq: 188.01 or equiv.

**188.03 Tennis III U 2**

Continuation of 188.02 with emphasis on playing strategy for both doubles and singles.

4 lab hrs arr. Prereq: 188.02 or 188.04 or equiv.

**190 Acrosport**

Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable.

**190.04 Acrosport I U 1**

Basic skills in tumbling, and hand balancing.

2 lab hrs.

**190.05 Acrosport II U 2**

Continuation of 190.04 with emphasis on routine construction for competition or exhibition.

4 lab hrs arr. Prereq: 190.04.

**191 Volleyball U 2**

4 lab hrs arr. Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable. Advanced students should elect 631.14.

**191.01 Volleyball I**

Introduction to power volleyball.

**191.02 Volleyball II**

Continuation of power volleyball fundamental skill perfection and game strategies woven to produce an intermediate playing experience.

Prereq: 191.01 or equiv.

**195 Yoga**

Introduction to fundamental techniques and basic yogic principles of pranayama (breath control), asana (posture), relaxation, and meditation; emphasis on major postures.

**195.01 Yoga I U 1**

2 lab hrs arr.

**195.02 Yoga II U 1**

Asanas (postures) at the intermediate level of Hatha yoga are introduced; continued development and practice of relaxation and meditative techniques; further exploration of yogic philosophy.

1 2-hr cl. Prereq: 195.01 or equiv.

**196 Varsity Squads U 2**

Participation as a player on a varsity squad.

6 lab hrs. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. These courses are graded S/U.

**196.01 Baseball****196.02 Basketball****196.03 Cross Country****196.04 Fencing****196.05 Field Hockey****196.06 Football****196.07 Golf****196.08 Gymnastics****196.09 Ice Hockey****196.10 Lacrosse****196.11 Pistol****196.12 Riflery****196.13 Soccer****196.14 Softball****196.15 Swimming and Diving****196.16 Swimming (Synchronized)****196.17 Tennis**

- 196.18 Track  
196.19 Volleyball  
196.20 Wrestling

### 197 Competitive Club Sports U 1

Participation as a member of a competitive club sport team.

3 lab hrs. Prereq: Prior experience on at least one competitive club sport team and soph standing. Repeatable to a maximum of 3 cr hrs. Preregistration with dept required. This course is graded S/U.

### 208 Orientation to Physical Education U 2

Consideration of personal competencies essential for effective teaching, research, recreation, coaching; and investigation of areas of concentration; relationships to other disciplines.

2 cl.

### 209 Orientation to Exercise Science U 2

A general introduction to exercise science focusing on instrumentation; measurement, and training equipment.

1 cl. 2-hrs clinical. Prereq: EDP in the College of Education. Open only to students admitted to the Exercise Science program.

### 214 Physical Education Activities U 3

To develop knowledge, understanding, and skills in the basic activities appropriate to the teacher of physical education.

5 2-hr labs. Open only to students planning to major in phys ed or rec ed. Not open to students with credit for 133.

### 215 Physical Education Activities U 3

Continuation of 214.

5 2-hr labs. Open only to students planning to major in phys ed or rec ed. Not open to students with credit for 132.

### 216 Physical Education Activities U 3

Continuation of 215.

5 2-hr labs. Open only to students planning to major in phys ed or rec ed. Not open to students with credit for 133.

### 221 Sports Officiating U 2

Study of playing rules, rule interpretation, techniques, and mechanics of officiating various interscholastic and intercollegiate athletic sports.

2 cl. Prereq: Satisfactory evidence of playing skill in the elected athletic sport. Repeatable to a maximum of 12 cr hrs, subdivisions not repeatable.

#### 221.01 Baseball

#### 221.02 Basketball

Students completing the course are eligible for certification to officiate in Ohio schools.

#### 221.04 Football

Students completing the course are eligible for certification to officiate in Ohio schools.

#### 221.12 Wrestling

Students completing the course are eligible for certification to officiate in Ohio schools.

#### 221.14 Volleyball

#### 221.15 Softball

### 231 Physical Education Activities U 1

Designed to develop knowledge, understandings, and skills in the basic activities appropriate to the teacher of physical education.

3 1-hr labs. Open only to phys ed and recreation education majors.

### 232 Physical Education Activities U 1

Continuation of 231.

3 1-hr labs. Open only to phys ed and recreation education majors.

### 233 Physical Education Activities U 1

Continuation of 232.

3 1-hr labs. Open only to phys ed and recreation education majors.

### 260 Sport in Contemporary America U 3

A study of the contemporary sport scene in America; the issues, the controversies confronting the athlete, the coach, the administrator, and the general public.

1 1½-hr cl; 1 1½-hr rec.

### 262 Coaching the Young Athlete U 3

Skills and knowledges essential to planning, coaching, and supervising competitive sports programs which are consistent with the needs of children.

1 2-hr cl, 1 2-hr lab. Not open to physical education majors. Register for desired lab section using alphabetical designation.

A— Baseball/Softball

B— Basketball

C— Football

D— Swimming

E— Other

### 263 Special Issues Affecting Contemporary Student-Athletes U 3

An exploration of current topics and problems concerning collegiate athletes and the decision-making skills needed to facilitate college adjustment.

2 1½-hr cl.

### 279 Directed Clinical Experiences in Developmental Motor Activity U 2

Clinical experience in evaluating the motor status of an individual child and the formulation and execution of a motor program for the child. Hekowitz.

Minimum of 3 hrs per week. Prereq: Phys ed major or permission of instructor. Repeatable to a maximum of 8 cr hrs with not more than 4 in a single decimal subdivision.

#### 279.01 Primary School

#### 279.02 Preschool

#### 279.03 Infant/Toddler

### 289 Directed Field Experience U 2-5

Pre-registration with department required. Repeatable to a maximum of 20 cr hrs.

#### 289.02 Coaching the Young Athlete

Prereq: 262. Not open to students who have been accepted into the physical education major program.

#### 289.03 Teaching Youth Groups

Prereq: 262 or 182.02 or other appropriate skill/methods courses with permission of instructor. Not open to physical education majors.

### 293 Individual Studies U 1-4

For individuals not majoring in physical education who wish to pursue special studies in work not normally offered in courses.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 294 Group Studies U 1-5

For groups of students not majoring in physical education who wish to pursue special studies or recreational sports activities.

Arr. Prereq: Permission of dept required. Repeatable to a maximum of 10 cr hrs.

### 301 Field Sports U 3

Acquisition of performance skills in a variety of field sports, including rules, traditions, and values of the sports and their roles in various sport cultures.

Au Qtr. 4 2-hr cl. Prereq: Admission to the phys ed major program.

### 302 Racquet Sports U 3

Acquisition of performance skills in a variety of racquet sports, including rules, traditions, and values of the sports and their roles in various sport cultures.

Sp Qtr. 4 2-hr cl. Prereq: Admission to the phys ed major program.

### 303 Individual Sports U 3

Acquisition of performance skills in a variety of individual sports, including rules, traditions, and values of the sports and their roles in various sport cultures.

Sp Qtr. 4 2-hr cl. Prereq: Admission to the phys ed major program.

### 304 Gymnastics U 3

Acquisition of performance skills in a variety of gymnastics activities, including rules, traditions, and values of gymnastics activities and their roles in various sport cultures.

Wi Qtr. 3 2-hr cl. Prereq: Admission to phys ed major program.

### 305 Court Games U 3

Acquisition of performance skills in a variety of court games, including rules, traditions, and values of the games and their role in various sport cultures.

Wi Qtr. 4 2-hr cl. Prereq: Admission to phys ed major program.

### 306 Outdoor Pursuits U 3

Acquisition of performance skills in a variety of wilderness sports, including rules, traditions, and values of outdoor pursuits and their roles in various sport cultures.

Au Qtr. 2 8-hr cl, 1 4-hr cl. Prereq: Admission to phys ed major program.

### 323 Creative Physical Education for Elementary Teachers U 3

Theory of physical activities as a medium for creative self-expression; exploration of rhythmical, individual, and group activities and their relation to development of children.

2 2-hr labs. Not open to students with credit for 541.

### 360 Kinesiology U 4

A study of functional anatomy and biomechanics and their application to human movement.

3 cl, 1 2-hr lab.



**362 Skill Analysis U 3**

Investigate and gain skill in identifying critical elements and common errors in sport skills for purposes of providing accurate, specific feedback to learners.

1 3-hr cl. Prereq: Major in teacher education in phys ed or permission of instructor.

**410 History of Leisure and Physical Activities in Western Society U 3**

Examination of the evolution of leisure, recreation, and physical education as personal, cultural, and institutional activity.

2 1½-hr cl. Prereq: 208 or permission of instructor.

**414 Applied Physiology of Exercise U 4**

In-depth examination of the effects of acute and chronic exercise on the human body.

3 cl, 1 2-hr lab. Prereq: Zoology 232 or Vet Phys 410 or equiv.

**441 Motor Development U 3**

Study of the development of fundamental motor skills growth, children's physical fitness, and the influence of sociological and psychological factors on the motor behavior of children. Herkowitz.

3 cl. Prereq: Recommended 360, Educ 451, and Zoology 232.

**448 Strategies for Improving Sport Performance U 3**

A study of psych-social factors in sport and active recreation with impact on performance and enhance participation.

2 1½-hr cl.

**489 Advanced Field Experience U 2-5**

Directed teaching experience for advanced undergraduate students in physical education.

Prereq: Permission of instructor or acceptance into physical education program. Repeatable to a maximum of 20 credit hours.

**489.04 Teaching in Adapted Physical Education U 2**

Experience in assessing and programming of gross motor activities with emphasis on teaching experience with handicapped children.

1 cl, 2 hr arr.

**489.05 Interscholastic Coaching U 2-5****489.07 Secondary School Programs U 2-5****489.08 Elementary School Programs U 2-5****489.09 Teaching of Sport and Dance in College Programs U 2-5****501 Behavioral Dimensions of Educational Settings: Principles U 3**

Introduction to principles of human behavior as they apply to educational settings.

Arr. Prereq: Admission to teacher certification program in Phys Ed or ED-HUSER or permission of instructor. Not open to students with credit for ED-HUSER 501.

**502 Behavioral Dimensions of Educational Settings: Applications U 3**

Application of behavioral systems and technologies to the acquisition of maintenance of academic and social behavior in educational settings.

Arr. Prereq: 501 or ED-HUSER 501. Not open to students with credit for ED-HUSER 502.

**503 Schools U 1**

Examination of basic concepts in school organization and control, school finance, teachers' organizations, liability, and teachers' rights and responsibilities.

Arr. Prereq: 501 and 502 or ED-HUSER 501 and 502 or permission of instructor. Not open to students with credit for ED-HUSER 503.

**504 Technological Applications for Special and Physical Education Students U 1**

Designed for undergraduate special and physical education students who wish to gain initial orientation with microcomputer applications in education.

2 cl. Prereq: Admission to teacher certification program in Phys Ed or ED-HUSER and permission of instructor. Not open to students with credit for ED-HUSER 504.

**505 Alternative Models for Education U 3**

Examines models for educating children and youth that differ from those experienced by the typical teacher candidate in K-12 public/parochial schools.

3 cl or 1 1½-hr cl. Prereq: 501 and 502 or ED-HUSER 501 and 502. Not open to students with credit for ED-HUSER 505.

**506 Senior Seminar: Transition to Teaching U 2**

A seminar focusing on problems and prospects for transitioning to professional service with specific focus on problems encountered in the induction period.

1 2-hr cl. Prereq or concur: Student teaching. Not open to students with credit for ED-HUSER 506.

**514 Applied Physiology of Exercise U 4**

Continuation of 414.

3 2-hr cl, 1 2-hr lab. Prereq: 414.

**531 Social Issues and Concerns in Sport, Leisure, and Exercise Behavior U 5**

Examination of social and ethical issues such as discrimination, drug use, and the significance of the sport experience to individuals and sub-groups in the United States.

4 cl, 1 hr arr. Prereq: English 110 or 111 or equiv, second writing course, and jr or sr standing. Not open to students with credit for Rec Educ 531. Cross-listed in Rec Educ. GEC/LAR course.

**540 Introduction to Teaching and Classroom Management in Physical Education U 5**

Introduction to generic teaching and classroom management skills for effective teaching. Siedentop.

2 cl, 2 2-hr lab. Prereq: Admission to certification program in phys ed.

**541 Physical Education and the Elementary School Child U 5**

The study of content, program design, and teaching techniques appropriate to the elementary school child.

2 cl, 3 2-hr labs. Prereq: 230, 489.02 and Educ 451. 489.08 must be scheduled concur for 2 cr.

**542 Lifespan Motor Development U 5**

Physical growth, development, and motor behavior across the lifespan.

3 cl and 2 2½-hr clinical experiences.

**543 Coaching Effectiveness U 4**

Introduction to the teaching/learning process with emphasis on pedagogical skills necessary for coaching effectiveness.

2 2-hr cl. Prereq: 262 and soph standing.

**544 Sport and Leisure Perspectives for Special Populations U 3**

Introduction to sport and leisure for persons with special needs across school, community, and clinical based programs.

2 2½-hr cl. Prereq: For Sport and Leisure Studies majors only.

**586 Student Teaching in Physical Education in Elementary Schools U 7**

Observation, participation, and responsible teaching in a public school; individual and group conferences or seminars.

Prereq: 489.08, 541, and 4th yr standing in educ. 15 cr hrs of student teaching is required. Students desiring state certification in grades K-6 must elect 7 cr hrs of 586 and 8 cr hrs of 587. This course is graded S/U.

**587 Student Teaching in Physical Education in Secondary Schools U 8 or 15**

Observation, participation, and responsible teaching in a public school; individual and group conferences or seminars.

Prereq: 647, 489.07 and 4th yr standing in educ. 15 cr hrs of student teaching are required. Students desiring state certification in grades 7-12 only may elect all 15 cr hrs in 587; others will combine 8 cr hrs of 587 with 7 cr hrs of 586. This course is graded S/U.

**589 Internship in Exercise Science U 7, 8 or 15**

Clinical experience in exercise testing; evaluation and implementation in an exercise/fitness setting.

30 hrs/wk. Prereq: Admission to exercise science option. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**General Prerequisite for Courses Numbered 600 or 700**

*The minimal requirement for 600- and 700-level courses is junior standing.*

**607 Legal Aspects of Sport and Physical Activity U 4**

Development of a responsible and safe attitude toward sport programming; identification of procedures to reduce the probability of injuries/lawsuits resulting from sport and physical activity.

2 2-hr cl. Prereq: Jr standing.

**610\* Women's Sport History U G 4**

Examines women's sporting experiences for primitive cultures to contemporary societies; investigates influence of class, economics, power relationships, education, and views of the body.

4 cl.

**620 Coaching of Athletic Sports**

Study in the theory, strategy, and mechanics of coaching various interscholastic; intercollegiate athletic sports.

2 cl, 2 lab hrs. Prereq: Advanced skill level in the elected sport, jr standing and permission of instructor. Repeatable to a maximum of 18 cr hrs; subdivisions not repeatable, except 620.09.

**620.01 Baseball U G 3****620.02 Basketball U G 3**

- 620.04 Football U G 3  
 620.05 Gymnastics U G 3  
 620.06 Golf U G 2  
 620.08 Soccer U G 3  
 620.10 Tennis U G 2  
 620.11 Track and Field U G 3  
 620.12 Wrestling U G 2  
 620.14 Volleyball U G 2
- 621 Principles of Physical Education U G 5**  
 Origins and nature of modern physical education as developmental experience and medium of education; contributions to organic growth, personal resources, and growth in social relationships.  
 5 cl. Prereq: Major or minor in phys ed, or permission of instructor.
- 622 History of Physical Education and Sports from Ancient Times to 19th-Century Europe U G 3**  
 A history of physical education and sports which includes primitive societies, Greek and Roman civilizations, the medieval period, and European countries in the 18th and 19th centuries.  
 3 1-hr cl.
- 623 History of Physical Education and Sports in the United States U G 3**  
 The development of physical education and sports in the United States from colonial times to the present and the factors which have affected their growth.  
 3 1-hr cl.
- 624 Nature of Human Movement U G 3**  
 Consideration of human movement through elementary description, analysis, posture, alignment, style, and technique.  
 2 1½-hr cl, 1 hr arr. Not open to students with credit for 230.
- 625 Movement Awareness, Observation, and Description U G 3**  
 The use of effort-shape and its relationship to movement observation, description, and analysis.  
 1 2-hr cl. Prereq: 230 or equiv. Not open to students with credit for 430.
- 626 Sport and Popular Culture Series U G 3**  
 A variety of themes present in selected popular cultural forms dealing with a variety of sports such as football, basketball, baseball, and track and field.  
 1 1-hr cl, 1 2-hr cl.  
**626.01 Sport and Popular Culture Overview**  
**626.02 Sport and Popular Culture - Race and Gender**  
 Prereq: 626.01 or permission of instructor.  
**626.03\* Sport and Popular Culture - Baseball**  
 Focus on baseball as it has appeared in film and literature of and about the early 1900's to the present day.  
 Prereq: 626.01 or permission of instructor.
- 628 Designing a Movement Arts Curriculum for Children U G 3**  
 Movement arts education and strategies for designing and implementing a movement arts curriculum for children.  
 1 2½-hr cl, and 5 8-hr cl during Su Qtr. Students may concurrently and in ensuing quarters enroll in 693 and/or 889 to continue developing and field testing a 4M program in schools under University supervision.
- 630 Problems in Intramural Sports U G 2**  
 A critical analysis of intramural sports programs; problems of policy and administration of programs on the elementary, secondary, and college levels will be studied. Beekman.  
 Qtrs. 1 2-hr cl.
- 631 Advanced Skill Techniques U G 2**  
 Advanced techniques of performance and a specialized and intense study of appropriate technical literature.  
 4 1-hr labs. Prereq: Advanced skill level, jr standing and permission of instructor. Repeatable to a maximum of 10 cr hrs. Subdivisions not repeatable except 631.20.  
**631.06 Golf**  
**631.10 Tennis**  
**631.14 Volleyball**  
**631.20 Special Offerings**
- 647 Physical Education for Secondary School Youth U 5**  
 Emphasis on the study of needs, interests, and abilities of secondary school youth and teaching and curriculum strategies for the conduct of effective. O'Sullivan.  
 5 cl, 5-hr field experience, 1 2-hr lab. Prereq: 540 or equiv. Concur: 489.07.
- 648 The Group and Individual in Sport G 3**  
 An overview of psycho-social factors as they interact with the sport participation of individuals and groups.  
 2 1½-hr cl.
- 653 Elementary Physical Education for Special Educators U G 3**  
 Survey of elementary physical education with a focus on handicapped pupils; practice related to theories and research.  
 2 cl, 1 2-hr lab. Prereq: Ed-Excep 251 or permission of instructor. Students with credit for 323 must obtain permission of instructor. Not open to students with credit for Ed-Excep 653.
- 655 Eastern Movement Forms: Cross-Cultural Implications for Physical Education U G 3**  
 Examination of the theoretical foundations upon which Eastern movement and martial art forms are based. Practice opportunities in one or more of these forms are scheduled.  
 Au Qtr. 2 cl and 2 hrs arr.
- 658 Sport in Western Culture U G 3**  
 Examines sport in North American, South American, and European countries with emphases on influences of political ideology, economics, gender, race, and nationalism.  
 3 1-hr cl.
- 660 Laboratories in Exercise Physiology U G 1**  
 Selected laboratory experiences in the field of exercise science.  
 1 2-hr lab. Subdivisions are not repeatable.  
**660.01 Introductory Labs in Exercise Physiology**  
 Selected laboratory experiences to include cardiovascular and muscle function testing.  
**660.02 Intermediate Laboratories in Exercise Physiology**  
 Selected laboratory experiences to include cardiovascular and muscle function testing.  
 Prereq: 660.01 or equiv.  
**660.03 Advanced Laboratories in Exercise Physiology**  
 Selected laboratory experiences to include cardiovascular and muscle function testing.  
 Prereq: 660.02 or equiv.
- 661 Care and Prevention of Athletic Injuries U G 5**  
 A consideration of the methods of prevention and care of injuries, conditioning of athletes and safety provisions for the conduct of physical education. Bordner, Baugh, and Hill.  
 3 cl, 2 2-hr labs. Prereq: 360 or equiv. Open only to students in phys ed, hlth edu and physiotherapy, or permission of instructor.
- 662 Adapted Physical Education U G 3**  
 The organization and administration of individual physical education for typical and atypical students including the child with a physical or learning disability; laboratory experience with the atypical.  
 2 cl, 1 3-hr lab. Prereq: 360, 541, and 647.
- 664 Science of Preparing People for Competitive Sports U G 5**  
 Direct application of broad principles of anatomy, physiology, and kinesiology to sports and activities of the individual's interest; emphasis on understanding sports injuries and planning progressive conditioning systems.  
 5 cl. Prereq: 5 hrs in biological sciences. Not open to phys ed majors.
- 665 Adult Exercise Program — Implementation U G 3**  
 Introduction to adult exercise training and evaluation methods; emphasis on the implementation of programs for the normal healthy adult. Kirby.  
 3 cl. Prereq: 414 or equiv. To be taken concurrently with 660.01.
- 666 Exercise Training for Fitness and Cardiac Rehabilitation U G 3**  
 Continuation of 665; exercise testing for special populations; cardiac rehabilitation procedures; preventive exercise training programs. Kirby.  
 3 cl. Prereq: 665.
- 676 Programming for Severe Physical Impairments U G 3**  
 Background information and survey of programmatic considerations related to physical, motor, and fitness training of the severely handicapped.  
 1 2½-hr cl. Prereq: Ed-Excep 651 or permission of instructor. Not open to students with credit for Ed-Excep 676.
- 692 Workshop U G 1-8**  
 Intensive study of a physical education topic of interest to the participant for the purpose of developing sound principles and practices relating to it.  
 Cl arr. Prereq: Teaching experience or written permission of workshop director. Repeatable to a maximum of 12 cr hrs with not more than 4 workshops.
- 693 Individual Studies in Physical Education U G 1-4**  
 Investigation of selected professional problems.  
 Qtrs. Prereq: Grad or sr standing, and permission of adviser. A total of not more than 30 cr hours of individual study (any 693) will apply toward graduation for undergrad students, 15 cr hours for the master's degree and 30 cr hours for the doctoral degree. This course is graded S/U.

**694 Group Studies in Physical Education U G 1-5**

Group studies on special problems in physical education.

Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

Repeatable to a maximum of 9 cr hrs, including cr hrs in ED-F & R 700.01, 700.02, 700.03, and 700.04; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Cross-listed in Ed Policy & Leadership, Ed. Theory & Practice, Ed-S&R, Educ Studies, Health Education, and Recreation Education.

**700.01 Seminar of Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

**700.02 Changing Societal Values U G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.

**700.03 Seminar on Ethical Issues Common to the Helping Professions U G 3**

Ethical issues of concern to the professions and arising out of advanced technology; euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.

**700.04 Interprofessional Practicum in Clinical Settings U G 3 or 5**

Interprofessional teamwork in clinical settings.

Prereq: Permission of instructor.

**700.05 Interprofessional Seminar in Policy Analysis U G 3**

Explores interprofessionally to history, formation, and implementation of public policy issues of significance to seven helping professions.

3 cl. Prereq: Permission of instructor.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

**700.07 Interprofessional Approaches to Child Abuse and Neglect G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

1 2 1/2-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

**708 Analysis of Teaching and Learning Processes G 3**

Techniques for defining, observing, and assessing teaching/learning processes with emphasis on verifying relationships between teaching strategies and student outcomes.

Sp Qtr. 2 1 1/2-hr cl. Prereq: Admission to M.Ed. program. Not open to students with credit for 871.

**709 Curriculum and Instructional Design G 3**

Systematic planning and design of the curriculum and its implementation using principles of instructional design and evaluation.

Su Qtr. 2 1 1/2-hr cl. Prereq: Admission to M.Ed. program.

**714 Responses and Adaptations to Exercise U G 5**

Study of responses and adaptations to the stress of exercise in humans and animals. Kirby, Lamb, and Sherman.

5 cl. Prereq: 10 cr hrs physiol or 10 cr hrs chem or 10 cr hrs biology, or equiv.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Educational Services & Research, Family Relations and Human Development, Human Nutrition and Food Management, Nursing, Psychology, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.

1 3-hr cl. Not open to students with credit in 717.01 in any cross-listed areas.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

1 2-hr cl. Not open to students with credit in 717.02 in any cross-listed areas.

**723 Elementary School Physical Education G 2**

Methods and materials of elementary school physical education dealing with the selection, instruction, and evaluation of elementary physical education activities.

5 4-hr cl for 20 hrs total. Prereq: Admission into the Early-middle Childhood Education M.Ed. program.

**727 Special Topics in Education P G 1-5**

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Prereq: Grad standing or registration in one of the professional schools. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**730 Philosophical Perspectives of Sport and Leisure G G 5**

Examination of philosophical sport and leisure scholarship with emphasis on contemporary theoretical literature and issues.

22-hr cl and 1-hr arr. Required of grad students in the socio-cultural Studies area of concentration.

**731 Concepts of the Body in Physical Education U G 5**

Study of the conceptions of the body that have influenced contemporary views of physical education and its practice. Kleinman.

2 2-hr cl, 1 hr arr.

**740 Teaching Physical Education in the Elementary School G 5**

Effective strategies for teaching physical education in the elementary school

Au Qtr. 4-hrs cl for the first 15 days of the qtr. Prereq: Admission to the M.Ed. certification program.

**741 Teaching Physical Education in Middle and High School G 5**

Teaching and curricular issues as they relate to middle and high school physical education programming.

Wi Qtr. 4 hrs daily for 15 days. Prereq: 706, 740, and 786.

**751 Physical Growth and Motor Development U G 3**

Study of growth in phylogenetic and ontogenetic sequence; motor development; critical analysis of research in motor ability, fitness, and athletics, as related to growth and development. Herkowitz.

3 cl. Prereq: Grad standing, or permission of instructor.

**760 Mechanical Analysis of Motor Skills U G 3**

The application of mechanical laws, principles, and formulae to motor skills.

3 cl. Prereq: 360 or equiv, and Physics 111, or permission of instructor.

**762 Motor and Physical Assessment of Children with Handicapping Conditions U G 3**

Survey of validity data on the most used assessment tools and practices in collecting motor and physical performance data on children with handicapping conditions.

1 3-hr cl. Prereq: 650, and 662 or Ed-Excep 651.

**765 Grant Writing I G 3**

Analysis of how applications for external funding in the School of Health, Physical Education, and Recreation are developed and submitted.

1 3-hr cl. Prereq: Permission of instructor.

**766 Grant Writing II G 3**

Advanced skills in writing research and training grants, applying methods taught in Grant Writing I.

1 3-hr cl. Prereq: 765 and permission of instructor.

**786 Internship in Physical Education at the Elementary School G 8**

Observation, participation, and responsible teaching in an elementary school setting.

Au Qtr. 6 hrs daily for the last 40 days of the quarter. Prereq: 740 and admission to the M.Ed. in Phys Ed program, or by permission of instructor.

- 787 Internship in Secondary Physical Education G 8**  
Observation, analysis, and teaching in a public secondary school; dual and three-way conferences with supervisor and cooperating teacher.  
Wi Qtr. 6 hrs daily for the last 40 days of the quarter. Prereq: 706 and 786. M.Ed. standing or by permission of the instructor.
- 800\* Introduction to Exercise Physiology G 4**  
Introduction to the field of exercise physiology with emphasis on energy liberation factors affecting performance, health, and fitness and physical training. Lamb and Sherman.  
2 2-hr cl. Prereq: Physiol 602 or equiv.
- 801\* Exercise Physiology: Metabolism, Temperature, Water, and Electrolyte Balances G 4**  
Continuation of 800; discussion of metabolism, temperature, water, and electrolyte balances during exercise and of the effects of physical training. Kirby and Lamb.  
2 2-hr cl. Prereq: 800 and permission of instructor.
- 802\* Exercise Physiology: Cardio-Respiratory System, Physical Training, and Muscular Strength Training G 4**  
Continuation of 801; discussion of cardio-respiratory system during exercise and effects of physical training. Lamb and Sherman.  
2 2-hr cl. Prereq: 801 and permission of instructor.
- 804\* Muscle Structure and Function: Overload and Disuse G 4**  
Muscle structure and function as related to normal physiology, overload, disuse, and exercise.  
2 2-hr cl. Prereq: 800 or 860; Physiol 602 or permission of instructor. Limited to 10 students.
- 805 Contemporary Issues in Recreational Sports Administration G 3**  
A study of current issues, management techniques, and programming concepts associated with the administration of campus recreation programs.  
2 1½-hr cl. Prereq: 630 or equiv.
- 806 Sport Management and Administration G 3**  
The various aspects of athletic, intramural, and recreation administration.  
2 1½-hr cl. Prereq: At least 2 qtrs in sports administration program or phys ed PhD candidate with minor area of athletic administration.
- 807 Legal Issues Affecting Sport G 3**  
A study of legal issues affecting the delivery of sport services; focus on liability in sport activities.  
2 1½-hour cl.
- 808 Effective Management of Sport Delivery Systems G 3**  
Application of contemporary management techniques used in the design and operation of sport delivery systems.  
2 1½-hr cl. Prereq: 3 hrs of management sci, Ed-P&L 806, or permission of instructor.
- 809 Sport Marketing G 3**  
Examination and utilization of basic marketing principles in the areas of sport (collegiate and professional) recreation.  
2 1½-hr cl. Prereq: Bus-Mktg 650.
- 810 Comparative Physical Education G 3**  
The current status and practice of physical education in a variety of countries throughout the world with emphasis on schools, universities, and sports clubs.  
2 1½-hr cl.
- 811 International Sport G 3**  
A study of the content and structure of international sports competition and an analysis of the various factors which affect its development.  
2 1½-hr cl.
- 812 Professional Sport in 20th-Century America G 3**  
Examination of the development of professional sport; its economic structure and relationship to mass media; the nature and problems of professional athletes.  
2 1½-hr cl. Prereq: Enrollment in Sports Management Program, or permission of instructor.
- 830 Problems in Interscholastic and Intercollegiate Athletics G 3**  
The relation of athletics to education; problems of athletic organization; eligibility; finance, current trends, and developments in management and purpose; public relations. Nelson.  
1 2½-hr cl.
- 831 Instructional Design for Teacher Educators in Physical Education G 3**  
Classification and analysis of learner outcomes in activity settings; emphasis on empirical methods for analyzing outcomes and alternatives for achieving outcomes in teacher education programs in physical education. Siedentop.  
1 2½-hr cl.
- 832 Human Movement Theory in Physical Education G 3**  
A study of the several theoretical conceptions of human movement and their implications for physical education and dance. Kleinman.  
2 1½-hr cl.
- 841 Physical Education in School and College G 3**  
An overview of the contemporary scene in physical education and an analysis of trends and events affecting it. Kleinman.  
1 2½-hr cl.
- 842 Seminar in the Role of Sports in Society G 5**  
Significance of sport to individuals and groups in society. Nelson.  
2 2-hr cl, 1 hr arr. Prereq: Sociol 465, or equiv.
- 845 Statistics for Physical Education and Health Education G 3**  
A study of techniques for interpreting research publications in the field, and of statistical procedures useful in analyzing data.  
3 cl. Prereq: 650; Math 116, 121, or 125; and permission of instructor.
- 851 Motor Learning G 3**  
Critical consideration of research and theory in the acquisition of skill; special attention is given to major trends in the field. Herkowitz.  
2 1½-hr cl. Prereq: 441 or equiv, Psych 600, or permission of instructor.
- 864 Naturalistic Inquiry in Physical Education G 4**  
Consideration of design and methods of inquiry for naturalistic field studies in physical education, sport, play, health, and dance; review of research results.  
1 2½-hr cl, 1 hr arr. Prereq: A grad course in research methods.
- 867 Biochemical Methods for the Assessment of Human Performance G 4**  
Development of laboratory procedures used to evaluate physiological responses and adaptations of blood and muscle exercise.  
2 cl, 3 hrs lab. Prereq: 860 or equiv and permission of instructor.
- 868 Research on Teaching in Physical Education G 3**  
Focuses on major issues, methodologies, and significant findings of research on teaching in physical education for the past two decades.  
1 3-hr cl.
- 869 Research on Teacher Education in Physical Education G 3**  
Analysis of the literature on teacher education research and physical education literature in particular.  
1 3-hr cl. Prereq: 868 or permission of instructor.
- 870 Research on Effective Teaching and Schooling G 3**  
Review of research on effective teaching and schooling with emphasis on using knowledge to reflect on one's own teaching.  
2 1½-hr cl. Prereq: Ed-F&R 864. Clinical/field assignments related to class content. Not open to students with credit for 894.03 or 994.03.
- 871 Behavioral Research Methods for Physical Education and Recreation G 3**  
Methods of individual organism research as applied to behavioral research problems in physical education and recreation; focus on developing observational competencies and research design skills. Siedentop.  
1 2½-hr cl. Prereq: 10 hrs of applied behavior analysis, behavior modification or equivs with written permission of instructor.
- 872 Advanced Studies in Adapted Physical Education G 3**  
Examination and assessment of developmental aspects as they relate to physical and motor performance behavior of children with developmental disabilities, mental retardation, and learning disabilities. Jansma.  
2 1½-hr cl. Prereq: 662 or equiv. Not open to students with credit for 894.02 or 994.02.
- 874 Physical Education in Secondary Education G 3**  
A presentation of new methods and curricula in physical education that are used in exemplary programs at the secondary school level; the process of developing plans and guides in physical education for secondary schools.  
1 2½-hr cl. Prereq: Experience in teaching in school or college.
- 876 Physical Education in Elementary Education G 3**  
Study of factors influencing decision making processes in elementary physical education; natures of children, society, knowledge, and learning; roles and responsibilities of teachers; resources and school organization currently available.  
2 1½-hr cl. Prereq: 323 or 541 or permission of instructor.

**880 Supervision for Teacher Education in Physical Education G 3**

Examines clinical models for supervision in physical education with emphasis on data collection techniques to provide feedback to teaching interns.

1 2 1/2-hr cl. Prereq: 870.

**881 Planning Facilities for Athletics, Physical Education, and Recreation G 3**

Principles and techniques in determining facility needs, evaluating facilities, planning for new construction, and remodeling the areas and facilities for athletics, physical education, and recreation.

Qtrs. 2 1 1/2-hr cl, 3 field trips.

**881.01 Outdoor Facilities****881.02 Indoor Facilities****886 Colloquium in Exercise Science G 1**

Discussion of current research in exercise science.

1 cl. Prereq: Grad standing in phys ed or permission of instructor. Repeatable to a maximum of 15 cr hrs. Required every qtr for registered grad students in exercise science. This course is graded S/U.

**889 Practicum in Physical Education and Recreation G 2-6**

Opportunity is provided for putting educational research and theory into practice by teaching, administration, and agency experience under supervision in university, school, and agency situations.

1 arr conf and arr field experience. Prereq: Permission of instructor and departmental advisor based upon submitted evidence of appropriate knowledge and skill in the selected course. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Problems in Physical Education G 1-5**

Advanced problems in physical education, individual or group participation. Prereq: Permission of instructor.

**989 Internship in Sport Management G 9**

Full-time professional development experience at an approved sport worksite setting. Opportunity to apply theory and skills learned in class under direction of on-site supervisor.

Internship--350 to 400 hrs. Reading/research/assignments--20hrs. Prereq: 889 and permission of instructor. This course is graded S/U.

**995 Seminar in Physical Education G 2-4**

1 2-hr cl. Repeatable.

A— Adapted Physical Education

B— Administration and/or Management

C— Curriculum and/or School Programs

D— Exercise Science

E— Historical and/or Philosophical Foundations

F— Movement Arts

G— Outdoor Pursuits

I— Professional Preparation

J— Psychological/Sociological Aspects

K— Sports, Athletics, and/or Intramurals

L— Special Offerings

M— Exercise Science Research

**999 Research in Physical Education G Arr**

Research for thesis or dissertation purposes only.

This course is graded S/U.

## Physical Medicine And Rehabilitation

1012 Dodd Hall, 471 Dodd Drive, 293-3801

**736 Clinical and Physiologic Bases of Physical Treatment P G 3**

The indications for, and choice of, physical modalities. Colachis and staff.

Au Qtr. 2 1 1/2-hr cl. Prereq: Grad or professional status and written permission of instructor.

**745 Biophysical Basis of Physical Treatment P 6, 12, 18**

The student will design and complete a laboratory or library research problem involving the biophysical aspects of physical diagnosis or treatment. Kaplan and staff.

1, 2, or 3 months; offered all months. Prereq: Grad or professional standing and permission of instructor. This course is graded S/U.

**750\* Natural History of Disability P G 3**

An analysis of the nature, patterns and evaluation of disability, the processes involved, and the factors influencing its course. Clairmont and staff.

Su Qtr. (even years) 2 1 1/2-hr cl. Prereq: Grad or professional status and written permission of instructor.

**760 Basic Prosthetics and Orthotics P G 3**

In-depth study of prosthetics and orthotics including evaluation of the patient, indications for fitting or specific devices, components of parts, fabrication techniques, and follow-up. Bowyer and staff.

Sp Qtr. 2 1 1/2-hr cl. Prereq: Grad or professional standing and written permission of instructor.

**770 Instrumentation, Neurophysiology, Clinical Aspects of Electromyography P G 3**

In-depth study of the instrumentation and correlation of neurophysiology and clinical aspects of electromyography, including excitable membranes, biological potentials, and nerve stimulation in clinical disorders. Pease and staff.

Wi Qtr. 2 1 1/2-hr cl. Prereq: Grad or professional status and written permission of instructor.

**780\* Psychological Aspects of Physical Disability and its Management by Physicians P G 3**

Designed to synthesize and summarize various aspects of advances in the behavioral sciences which have practical application to the rehabilitation of physical disabilities. Corrigan and staff.

Su Qtr. (odd years) 2 1 1/2-hr cl. Prereq: Grad or professional status and written permission of instructor.

**993 Individual Studies in Physical Medicine G 3-5**

Minor investigations using electrodiagnostic techniques; biophysical, physiologic, and therapeutic effects of physical agents, and other medical rehabilitation techniques. Mysiw.

Au, Wi, Sp Qtrs. Prereq: Grad or professional standing and permission of instructor. Repeatable to 15 cr hrs. This course is graded S/U.

**999 Research in Physical Medicine and Rehabilitation G Arr**

Research for thesis purposes only. Matkovic.

Su, Au, Wi, Sp Qtrs. Prereq: Grad or professional standing and permission of instructor. This course is graded S/U.

## Physical Therapy

School of Allied Medical Professions

306 School of Allied Medical Professions Building, 1583 Perry Street, 292-5921

**480 Procedures I U 5**

Professional orientation: introduction to the hospital setting and patient care; principles and techniques of basic body mechanics; bandaging and therapeutic massage.

Au Qtr. 3 cl, 2 2-hr lab. Prereq: Permission of instructor.

**481 Procedures II U 6**

Agents used in physical therapy: mechanical and physical properties; therapeutic application and physiological effects related to patients.

Wi Qtr. 4 cl, 2 2-hr lab. Prereq: Permission of instructor.

**495 Medical Kinesiology U 5**

Biomechanics and pathomechanics in the analysis of human motion; emphasis on clinical relationships.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: Permission of instructor.

**510 Clinical Orientation and Preparation for Clinical Education U 2**

2 1-hr cl. Prereq: Admission to physther. Not open to students with credit for any decimalized number under 585. This course is graded S/U.

**510.01 Clinical Decision-Making I**

Introduction to problem solving, documentation, and professional ethics.

Au Qtr.

**510.02 Clinical Decision-Making II**

Case presentations at clinical sites, problem solving, chart review, and documentation.

Wi Qtr.

**510.03 Clinical Decision-Making III**

Case presentations at clinical sites, advanced problem solving, and documentation.

Sp Qtr.

**512 Introduction to Clinical Issues U 3**

Preparation for clinical affiliations, and issues related to professional care and practice.

Sp Qtr. 3 1-hr cl. Prereq: Admission to physther. Not open to students with credit for any decimalized number under 585.

**515 Clinical Experience in Physical Therapy U 4**

Application of physical therapy techniques and activities supervised by physical therapists in selected clinical settings.

Su Qtr. Arr; minimum of 40 hrs/wk for a minimum of 6 wks. Prereq: 510, 512, and permission of clinical coordinator. Not open to students with credit for 585.04. This course is graded S/U.

**541 Therapeutic Exercise I U 6**

Basic principles and techniques of therapeutic exercise related to physical and medical sciences.

Au Qtr. 4 cl, 2 2-hr labs. Prereq: Permission of instructor.

**542 Therapeutic Exercise II U 6**

Rehabilitation procedures for maximum restoration of the disabled; functional relationships and principles associated with functional exercise and specialized equipment.

Wi Qtr. 4 cl, 2 2-hr labs. Prereq: Permission of instructor.

**543 Therapeutic Exercise III U 5**

Theory and technique of exercise for the neurologically handicapped with carry-over into all areas of disability; integration and correlation of therapeutic exercise approaches.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: Permission of instructor.

**551 Anatomical Clinical Presentations U 2**

Integration of anatomical, neuroanatomical, and kinesiological information obtained in previous courses to review, discuss, and problem solve clinical presentations or case studies.

Wi Qtr. 2 1-hr cl. Prereq: Sr standing in division and permission of instructor. This course is graded S/U.

**560 Aspects of Human Performance and their Management by Physical Therapist U 3**

Emphasis on health as a continuum, the physiology and benefits of aerobic exercise, and an introduction to cardiac rehabilitation.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**588 Professional Administration in Physical Therapy U 5**

Integration of theory and professional practice involving administration and supervision skills including interpersonal relationship concepts, oral, and written communication analysis, and professional responsibilities.

Sp Qtr. 5 cl. Prereq: Permission of instructor.

**589 Management of Private Physical Therapy Services U 3**

Presentation and discussion of business, administrative, and environmental factors affecting the establishment of a physical therapy practice by self-employed physical therapists.

Wi Qtr. 1 2½-hr cl. Prereq: Sr standing in division and permission of instructor. This course is graded S/U.

**595 Seminar U 1-3**

Conferences, group discussions, and presentations of selected topics.

Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**610 Clinical and Professional Practice Issues I U 3**

Clinical and professional practice issues, learning and work styles, leadership, conflict management, and reflective thinking.

Au Qtr. 3 1-hr cl. Prereq: Admission to PhysTher.

**612 Clinical and Professional Practice Issues II U 3**

Clinical issues, practice issues, the legislative process, and funding mechanisms for clinical services.

Wi Qtr. 3 1-hr cl. Prereq: Admission to PhysTher.

**615 Clinical and Professional Practice Issues III U 3**

Clinical issues: terminal clinical assignments, preparation of resumes, and entry into the work setting.

Sp Qtr. 3 1-hr cl. Prereq: Admission to PhysTher.

**620 Integrative Approach to Musculoskeletal Evaluation U G 5**

Musculoskeletal evaluation procedures and techniques, their integration, interpretation, and application as a foundation for program planning in physical theory.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: 495, CBN&Anat 201 or equiv; or permission of instructor.

**630 Neuroscientific Basis of Rehabilitation in Physical Therapy U G 4**

The neuroanatomical, physiological, and developmental basis of rehabilitation procedures used in physical therapy for the management of neurologically impaired persons.

Au Qtr. 4 cl. Prereq: 2nd yr standing in physther or permission of instructor.

**637 Pediatric Neurologic Physical Therapy U G 3**

Physical therapy management of the child with neurologic dysfunction.

Sp Qtr. 3 cl. Prereq: Sr standing in physther or grad standing in allied med and permission of instructor.

**Programming for Severe Physical Impairments**

See Phys Ed 676—Background information and survey of programmatic considerations related to physical, motor, and fitness training of the severely handicapped.

**The Parent/Professional Partnership**

See ED-S&R 677—Designed to help educators acquire knowledge and skills necessary to assist parents in facilitating the development, education, and socialization of severely handicapped children.

**685 Clinical Education U 6**

Clinical experience in the application of physical therapy techniques under supervision of physical therapists in hospital, community, and other selected facilities.

Su, Au, Wi, Sp Qtrs. Minimum of 40 hrs per wk for a minimum of 16 wks. Prereq: Permission of instructor and completion of all required physical therapy professional courses in the curriculum. Not open to students with credit for 596. This course is graded S/U.

**693 Individual Studies U G 1-15**

Guided study or individual readings, research, or experiences related to physiother.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to physther or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**720 Advanced Techniques of Manual Therapy G 4**

A comprehensive study of the normal anatomy and function of the lumbo pelvic region and techniques of managing pathologic conditions associated with this area.

Au Qtr. 2 cl, 2 2-hr lab. Prereq: Permission of instructor.

**730 Advanced Concepts in Neuromotor Control G 3**

Critical analysis of neuromotor systems, motor control, and motor dysfunction.

Wi Qtr. 1 2½-hr cl. Prereq: 630 or equiv or permission of instructor.

**795 Seminar G 1-3**

Discussion of selected topics.

Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**Reactions and Adjustment to Disability**

See ED-S&R 864—A study of individual reactions to various disabling conditions, the adjustment process, cultural norms and expectations, and responses to the rehabilitation process.

**Consultation in the Human Services Profession**

See ED-S&R 875—The consultation process, models, roles, skills, and outcomes for human services personnel will be addressed; emphasis is placed on extending theoretical and practical knowledge.

**889 Advanced Clinical Practicum G 2-4**

Advanced clinical experiences in specialized areas of physical therapy practice.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

## Physics

1012 Smith Laboratory, 174 West 18th Avenue, 292-5713

**100 Physics and Humans U 5**

An introduction to the physics of the world of everyday experience through study of selected topics.

Su, Au, Wi, Sp Qtrs. Not offered at Columbus campus. Not intended for ASC BS students. NS Admis Cond courses. BER/LAR courses.

**100.01 Vibrations and Waves**

1 lec; 2 2-hr disc.

**100.02 Energy**

1 lec; 2 2-hr disc.

**101 Nature of the Physical World U 5**

An elementary description of the physical world emphasizing scientific method and contemporary viewpoints; laboratory work and demonstrations.

Au, Wi Qtrs. Not offered at Columbus campus. 4 cl, 1 2-hr lab. Prereq: Math 075 or 076 or 104 or placement in math course code R. Not intended for ASC BS students. NS Admis Cond course. BER/GEC/LAR course.

**102 Nature of the Physical World U 5**

Continuation of 101.

Wi, Sp Qtrs. Not offered at Columbus campus. 4 cl, 1 2-hr lab. Prereq: 101. Not intended for ASC BS students. NS Admis Cond course. BER/GEC/LAR course.

**103 The World of Energy I U 5**

An examination of the concept of energy with its personal and global impact using the hands-on discovery mode.

Au, Sp Qtrs. 1 cl, 2 2-hr rec. Intended for non-science majors. Not open to students with credit for 100.02. NS Admis Cond course. BER/GEC/LAR course.

**104 The World of Energy II U 5**

Continuation of 103.

Su, Wi Qtrs. 1 cl, 2 2-hr rec. Prereq: 103. Intended for non-science majors. Not open to students with credit for 100.02. NS Admis Cond course. BER/GEC/LAR course.

**109 Preparation for Physics U 4**

Introduction to elementary concepts of mechanics with emphasis on correction of misconceptions and elementary mathematical methods in physics.

Au, Wi Qtrs. 4 cl. Prereq or concur: Math 150 or eligibility for Math 151. Recommended for students with little or no prior physics experience.

**111 General Physics: Mechanics and Heat U 5**

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: Eligibility for Math 150. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

**112 General Physics: Electricity, Magnetism, and Light U 5**

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 111. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

**113 General Physics: Modern Physics U 5**

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 112. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

**131 Introductory Physics: Particles and Motion U 5**

Major concepts of physics from a contemporary point of view; for students in physical sciences, mathematics, or engineering.

Su, Au, Wi, Sp Qtrs. 5 cl, 1 2-hr lab. Prereq: 1 entrance unit of physics or chem; and Math 151 and concur Math 152, or concur Math 161 or higher. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

**H131 Honors Physics: Particles and Motion U 5**

Major concepts of physics from a contemporary point of view; challenging, flexible format; includes honors lab; for students strong in physical sciences, mathematics, or engineering.

Au Qtr. 5 cl, 1 2-hr lab. Prereq: 1 entrance unit of physics or chem; and Math 151 and concur Math 152, or concur Math 161 or higher, or written permission of instructor. NS Admis Cond course. BER/GEC/LAR course.

**132 Introductory Physics: Electricity and Magnetism U 5**

Continuation of 131.

Su, Au, Wi, Sp Qtrs. 5 cl, 1 2-hr lab. Prereq: 131; and Math 152 and concur Math 153, or concur Math 162 or higher. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

**H132 Honors Physics: Electricity and Magnetism U 5**

Continuation of H131.

Wi Qtr. 5 cl, 1 2-hr lab. Prereq: H131 with grade of C or better; and Math 152 and concur Math 153, or concur Math 162 or higher, or written permission of instructor. NS Admis Cond course. BER/GEC/LAR course.

**133 Introductory Physics: Thermal Physics, Waves, and Quantum Physics U 5**

Continuation of 132.

Su, Au, Wi, Sp Qtrs. 5 cl, 1 2-hr lab. Prereq: 132, and Math 153 or Math 162 or higher. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

**H133 Honors Physics: Thermal Physics, Waves, and Quantum Physics U 5**

Continuation of H132.

Sp Qtr. 5 cl, 1 2-hr lab. Prereq: H132 with grade of C or better, and Math 153 or Math 162 or higher, or written permission of instructor. NS Admis Cond course. BER/GEC/LAR course.

**201 Physics by Inquiry: Matter and Heat U 5**

Properties of matter, heat, and temperature, and experimental physics for education majors.

Wi Qtr. 2 3-hr labs. Intended for non-science majors, especially those interested in education. NS Admis Cond course. BER/GEC/LAR course.

**202 Physics by Inquiry: Electricity, Magnetism, and Light U 5**

Electric and magnetic phenomena, electric circuits, geometrical optics, and experimental physics for education majors.

Sp Qtr. 2 3-hr labs. Intended for non-science majors, especially those interested in education. NS Admis Cond course. BER/GEC/LAR course.

**261 Dynamics of Particles and Waves I U 4**

Vectors and kinematics; foundations of Newtonian mechanics; momentum, work, and energy; conservative and nonconservative forces; potentials; angular momentum; rotation about a fixed axis.

Au Qtr. 4 cl. Prereq or concur: 132. Not open to students with credit for 525.

**262 Dynamics of Particles and Waves II U 4**

Rigid body motion; noninertial systems and fictitious forces; central force motion; the special theory of relativity; relativistic kinematics; relativistic momentum and energy.

Wi Qtr. 4 cl. Prereq: 261 and prereq or concur 133; and concur Math 254 or Math 263. Not open to students with credit for 525.

**263 Dynamics of Particles and Waves III U 4**

Introduction to quantum systems; photons; the Bohr atom; matter waves.

Sp Qtr. 4 cl. Prereq: 262, and Math 254 or Math 263.

**294 Group Studies U 1-6**

Designed to permit groups of students the opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**295 Introductory Seminar U 1**

Introduction to departmental research programs and to selected topics of interest in contemporary physics.

Au Qtr. 1 2-hr cl. Prereq: 131. This course is graded S/U.

**367 Uses of Science in Solving Problems of Society U 5**

Energy, environment, and the arms race are examined using the methods of science; focuses on interaction of science and technology; and social and ethical implications of choices.

Au and/or Sp Qtrs at Marion campus, qtrs vary at Columbus campus. 5 cl. Prereq: Math Placement S or higher; 1 5-hr 100-level course in either astron, bio sci, chem, geol sci, or physics; English 110 or 111 or equiv. Not open to students with credit for Phys Sci 180. BER/GEC/LAR course.

**416 Methods of Experimental Physics U 4**

Introduction to the experimental techniques of physics and the statistical analysis of data, through lectures and a variety of experiments.

Au, Wi, Sp Qtrs. 1 1-hr cl, 2 2-hr labs. Prereq: 131, 132, and 133. GEC course.

**501 Descriptive Acoustics U G 3**

Descriptive treatment of acoustics with applications to music and speech including sources, propagation, reception, characteristics of sound; room acoustics; hearing; and apparatus.

Au Qtr. 3 cl. Prereq: Math 050 or Mathematics placement level S. Not intended for ASC BS students. Not open to physics or engineering majors without permission of instructor. BER/LAC/LAR course.

**503 General Meteorology U G 5**

A description of weather phenomena and the physical processes underlying them; intended primarily for nonphysics majors.

Sp Qtr. Prereq: 111 or 131 or permission of instructor. BER/LAC/LAR course.

**516 Intermediate Physics Laboratory U G 4**

Selected intermediate level experiments from basic areas of physics.

Su, Au, Wi, Sp Qtrs. 2 3-hr labs. Prereq: 113 or 133 or permission of instructor. Not open to physics majors or grad students in physics. Repeatable to a maximum of 12 cr hrs.

**517 Introductory Electronics for Physicists U 4**

Intermediate level introduction to electronic circuits, devices, and instrumentation with emphasis on laboratory experience.

Au, Wi, Sp Qtrs. 1 2-hr cl, 2 3-hr labs. Prereq: 133 or permission of instructor. Not open to students with credit for 617; or to grad students in physics.

**525 Dynamical Models U G 4**

Dynamical models of particle motion; behavior of linear systems; periodic and transient phenomena in mechanical and electrical systems; central force problems; frames of reference.

Su, Sp Qtrs. 4 cl. Prereq: 133 and Math 255 or equiv. Not open to students with credit for 262.

**555 Fields and Waves I U G 4**

Introduction to the description of electrostatic fields; dielectrics; boundary-value problems.

Au Qtr. 4 cl. Prereq: 133 and prereq or concur 261, and Math 415 or Math 255, and Math 513 or 551 or 416.

**593 Individual Studies U G 2-5**

Independent reading, study, or laboratory work at an intermediate level.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.



**594 Group Studies U G 1-6**

Group studies of special topics not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Satisfactory intermediate level courses in physics and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**596 Senior Seminar: Writing and Speaking about Physics and Astronomy U 3**

Seminar on selected topics in physics and astronomy; training in written and oral presentations; third writing course.

Au, Sp Qtrs. 4 cl. Prereq: 262 or equiv, Math 255 or 415, second writing course, and jr or sr standing. Not open to students with credit for 595. GEC/LAR course.

**616 Advanced Physics Laboratory U G 4**

Experiments selected from all areas of physics; independent work emphasized.

Au, Wi, Sp Qtrs. 2 3-hr labs. Prereq: 263, 555, and 416 or Stat 245, or permission of instructor; 631 recommended. Repeatable to a maximum of 24 cr hrs.

**617 Electronics for Physicists U G 5**

An intensive introduction to electronic circuits, devices, and instrumentation with emphasis on laboratory experience.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl, 2 3-hr labs. Prereq: 263.

**621 Statistical Physics I U G 4**

Thermodynamics and statistical mechanics; applications to noninteracting classical and quantum systems.

Au Qtr. 4 cl. Prereq: 263.

**622 Statistical Physics II U G 4**

Interacting systems, special states of matter, critical phenomena and phase transitions.

Wi Qtr. 4 cl. Prereq: 621 or equiv.

**631 Introductory Quantum Mechanics I U G 4**

Introduction to quantum mechanics, including its historical background, the Schrodinger equation, solutions of one-dimensional scattering and bound state problems.

Au Qtr. 4 cl. Prereq: Course in modern physics beyond 133 and Math 255 or 415 and Math 568 or 571.

**632 Introductory Quantum Mechanics II U G 4**

Continuation of 631; the Schrodinger equation in three dimensions, angular momentum, the hydrogen atom, Dirac notation, and time-independent perturbation theory.

Wi Qtr. 4 cl. Prereq: 631.

**633 Introductory Quantum Mechanics III U G 4**

Continuation of 632; time-dependent perturbation theory, scattering theory and the Born approximation, multi-electron atoms, and selected further applications.

Sp Qtr. 4 cl. Prereq: 632.

**656 Fields and Waves II U G 4**

Continuation of 555; magnetic fields of steady currents; induction; Maxwell's equations; plane waves; special relativity.

Wi Qtr. 4 cl. Prereq: 555 or equiv.

**657 Fields and Waves III U G 4**

Continuation of 656; plane waves in matter; physical optics; coherence, interference, diffraction, and dispersion.

Sp Qtr. 4 cl. Prereq: 656 or equiv.

**664 Theoretical Mechanics U G 4**

Development of Lagrangian mechanics, inertia and stress tensors, rigid body rotations and introduction to the mechanics of continuous media.

Sp Qtr. 4 cl. Prereq: 262 and Math 255, concur Math 513 or 551.

**670 Physics for In-Service Teachers U G 1-15**

Designed to deepen teachers' understanding of basic physical concepts and methods of treatment of selected topics; includes lectures, discussions, demonstrations, and individualized laboratory work.

Su, Au, Wi, Sp Qtrs. Prereq: 15 cr hrs in physics, teaching experience, and permission of instructor. Intended for secondary school science teachers. Repeatable to a maximum of 30 cr hrs.

**693 Individual Studies U G 1-15**

Designed to give a properly qualified student opportunity for independent reading, study, or laboratory work in a specialized field of interest.

Su, Au, Wi, Sp Qtrs. Prereq: Satisfactory advanced courses in experimental and theoretical physics and permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**730 Methods of Theoretical Physics I U G 4**

Sturm-Liouville theory of orthogonal functions; boundary value problems in Cartesian, cylindrical, spherical coordinates; Fourier series, Legendre polynomials, spherical harmonics, and Bessel functions.

Su, Au Qtrs. 4 cl. Prereq: Math 601, and 701 or equiv.

**731 Methods of Theoretical Physics II U G 4**

Convergence of infinite series; complex variables, analytic properties and expansions, calculus of residues, gamma function, Hankel functions, modified Bessel functions, other special functions, differential equations.

Wi Qtr. 4 cl. Prereq: Math 601 and 701 or equiv.

**780 Topics in Contemporary Physics U G 4**

Experimental and theoretical aspects of areas of current interest in physics.

3 cl. Prereq: 631.

**780.02 Elementary Particle Physics**

Sp Qtr.

**780.04 Atomic and Molecular Physics**

Wi Qtr.

**780.05 Nuclear Physics**

Wi Qtr.

**780.06 Condensed Matter Physics**

Sp Qtr.

**780.20+ Special Topics****H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and cumulative pt-hr ratio commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**795 Special Topics Seminar U G 1**

A survey of current research problems in physics.

Au, Wi Qtrs. Prereq or concur: 631 or equiv. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**801 Seminar in Physics G 1**

Seminars will be conducted by various members of the staff on topics of current interest in their fields of specialization; students will participate in the presentation and discussion of material.

Su, Au, Wi, Sp Qtrs. Prereq: Acceptable specialized courses and permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**816 Topics in Physics G 3-6**

Laboratory and/or theoretical work on an individual basis on topics of current interest.

Su, Au, Wi, Sp Qtrs. Prereq: 616 or equiv and permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**821 Classical Dynamics G 4**

Lagrangian dynamics, variational principles, Hamilton's equations, canonical transformations, symmetries and conservation laws, small oscillations, normal coordinates, and classical fields.

Au Qtr. 4 cl. Prereq: 664 or equiv.

**822 Elasticity and Fluid Mechanics G 4**

Elasticity of solids; stress and strain tensors, dislocations; fluid mechanics; ideal and viscous fluids, chaos, and turbulence.

Sp Qtr. 4 cl. Prereq: 821 or permission of instructor.

**827 Quantum Mechanics I G 5**

Postulates and Schrodinger equation, linear vector spaces, one-dimensional problems, path-integral formulation of quantum theory; multiparticle systems, symmetry, orbital angular momentum, and central potentials.

Au Qtr. 4 cl. Prereq: 633 or equiv or permission of instructor.

**828 Quantum Mechanics II G 5**

Spin angular momentum and its dynamics; addition of angular momenta; variational method; time-dependent and time-independent perturbations, semiclassical treatment of electromagnetic radiation.

Wi Qtr. 4 cl. Prereq: 827.

**829 Quantum Mechanics III G 5**

Quantized electromagnetic radiation; scattering theory; density matrix; Dirac equation, relativistic hydrogen atom; Hartree-Fock theory, atoms, and molecules.

Sp Qtr. 4 cl. Prereq: 828.

**830 Quantum Mechanics IV G 4**

Systems with several electrons, exclusion principle; applications to atoms and molecules, and to scattering; Hartree-Fock approximation; Dirac equation for free electrons and for hydrogen.

Au Qtr. 4 cl. Prereq: 829.

**831 Advanced Quantum Mechanics G 4**

Symmetry groups; Lorentz transformations; field quantization; S-matrix theory; general perturbation theory.

Wi Qtr. 4 cl. Prereq: 830.

**834 Electromagnetic Field Theory I G 4**

Maxwell's equations; boundary value problems involving static electric and magnetic fields; fields in material media; electromagnetic waves in vacuum.

Au Qtr. 4 cl. Prereq: 656 or equiv.

**835 Electromagnetic Field Theory II G 4**

Radiation by simple systems, diffraction; special relativity and relativistic particles, transformation properties of electromagnetic fields; radiation by moving charges in vacuum and in material media.

Wi Qtr. 4 cl. Prereq: 834 or permission of instructor.

**846 Statistical Physics I G 4**

Physical thermodynamics and introduction to statistical physics; fundamental postulates, entropy, thermodynamic potentials and changes of phase; microscopic expression for entropy and basis of classical ensemble theory.

Wi Qtr. 4 cl. Prereq: 622 and 664 or equiv.

**847 Statistical Physics II G 4**

Canonical and grand ensembles; Quantum statistical mechanics; density matrices, partition functions, Bose and Fermi gases; Debye specific heat; black-body radiation;

Bose-Einstein condensation; interacting systems.

Sp Qtr. 4 cl. Prereq: 846 and 828.

**848 Advanced Statistical Physics G 4**

Interacting systems; Ising and Heisenberg models of magnetism, theory of dense gases and liquids, phase transitions and critical phenomena; non-equilibrium statistical physics, Boltzmann equation.

Au Qtr. 4 cl. Prereq: 829 and 847, or permission of instructor.

**880 Advanced Topics G 3**

A systematic advanced treatment of areas of current interest in physics; topics will be announced each quarter.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 828 or permission of instructor. Repeatable to a maximum of 9 cr hrs in each decimal subdivision.

**880.02 Elementary Particle Physics****880.03 Low-Temperature Physics****880.05 Nuclear Physics****880.06 Condensed Matter Physics****880.08 Theory of Quantized Fields****880.20 Special Topics****999 Research in Physics G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Physiological Chemistry

See Medical Biochemistry

## Physiological Optics

A400 Starling Loving, 338 West 10th Avenue, 292-2647

**501 Geometrical Optics U P 5**

Paraxial optics, primary optical aberrations, thick lens and mirror systems, ray tracing, field and aperture stops, and prisms.

Au Qtr. 3 cl, 1 4-hr lab. Prereq: Optometry 1st yr standing or major in phys opt.

**502 Physical Optics U P 5**

Light sources and spectra; light waves and their interference, diffraction, dispersion, and polarization.

Sp Qtr. 3 cl, 1 4-hr lab. Prereq: 501.

**511 Introduction to Physiological Optics I U P G 5**

The eye as an optical instrument; the refracting mechanism; the mechanism of accommodation and pupillary contraction; blur of the retinal image; stray light in the eye.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 501 and 608. Not for grad credit to students majoring in phys opt.

**512 Introduction to Physiological Optics II U P G 5**

The motility of the eye; the structure and innervation of the extraocular muscles; the center of rotation; and analysis and description of eye movements.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: 511. Not for grad credit to students majoring in phys opt.

**520 Measurement and Specification of Visual Stimuli U P G 5**

Light sources; diffusely transmitting and reflecting surfaces; light scatter; principles of photometry and colorimetry; selection and arrangement of light sources.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 2nd yr standing and 511. Not for grad credit to students majoring in phys opt.

**531 Basic Human Anatomy U P 5**

Basic human developmental, neural, and gross anatomy, using models and films, supplemented with prepared specimens.

Au Qtr. 3 cl, 2 2-hr lab. Prereq: Optometry 1st yr standing or major in phys opt.

**535 Microscopic Anatomy U P 5**

Microscopic anatomy of cells and tissues, and special histology of the organ systems.

Wi Qtr. 3 cl, 2 2-hr lab. Prereq: Optometry 1st yr standing or major in phys opt.

**608 Anatomy of the Eye U P G 5**

Human gross anatomy of the head and neck with special emphasis on the eye and orbit; histology and embryology of the eye and associated structures.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: 1st yr optometry or permission of instructor.

**613 Intermediate Physiological Optics I U P G 5**

Monocular sensory mechanisms of vision; analysis and specification of visual stimuli; photoreception and retinocortical transmission; adaptation of photoreceptors; flicker; brightness discrimination; and color vision.

Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 512.

**614 Intermediate Physiological Optics II U P G 3**

Circulation and metabolism of the eye; intra-ocular pressure; lacrimal system; movements and functions of the eyelids.

Wi Qtr. 3 cl. Prereq: 512.

**693 Individual Studies in Physiological Optics P G 1-15**

Properly qualified students may perform minor investigations or add to their knowledge and technique.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dean. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**715 Intermediate Physiological Optics III P G 5**

Projection of visual impressions; the horopter, retinal correspondence; binocular integration of hue and brilliance.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 2nd yr standing and 613.

**716 Intermediate Physiological Optics IV P G 5**

Visual perception of color, illumination, figure-ground relations, size, shape, direction, distance, motion, time, and complex patterns.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: 715.

**731 Occupational and Environmental Vision P G 5**

Visual testing in industry; relation of vision to performance, comfort, and safety; visual requirements for licenses; eye hazards and protection; compensation for vision loss.

Wi, Sp Qtr. 3 cl, 1 4-hr lab. Prereq: 520. Optometry 4th yr standing, or major in phys opt.

**732 Vision of Children P G 5**

Visual-survey methods; the prevalence of visual anomalies and eye diseases in children; basic visual skills required in school and methods for their improvement.

Au Qtr. 3 cl, 1 4-hr lab. Prereq: Optometry 4th yr standing or major in phys opt.

**733 Optometric Gerontology P G 5**

A survey of visual and systemic changes associated with aging, with emphasis on ophthalmic examination and rehabilitative techniques.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: Optometry 4th yr standing or major in phys opt.

**780 Topics in Physiological Optics P G 1-5**

Experimental and theoretical aspects of areas of current interest in physiological optics.

Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Enrollment in College of Optometry or grad standing in phys opt and permission of dean. Repeatable to a maximum of 30 cr hrs with not more than 20 cr hrs in any one subdivision.

**780.01 Ocular Anatomy****780.02 Ocular Physiology****780.03 Corneal Physiology****780.04 Microbiology of the Eye**

- 780.05 Experimental Design  
 780.06 Psychophysics of Vision  
 780.07 Paradigm of Physiological Optics  
 780.08 Ocular Biometrics  
 780.09 Visual Optics  
 780.10 Environmental Vision  
 780.11 Image Evaluation  
 780.12 Geometrical Optics  
 780.13 Physical Optics  
 780.14 Oculomotor Systems  
 780.15 Binocular Visual Processes  
 780.16 Monocular Visual Processes  
 780.17 Photochemistry of Vision  
 780.18 Color Vision  
 780.19 Stimulus Specification  
 780.20 Neurophysiology of Vision  
 780.21 Visual Electrometrics  
 780.22 Physiological Optics

**795 Seminar P G 1-5**

A series of seminars dealing with new developments in the various phases of physiological optics.

Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**801 Advanced Physiological Optics I G 5**

The ocular image-forming mechanism; accommodation and pupil contraction, aberrations, stray light entropic phenomena; shape, size, distortion; retinal illuminance and blur.

Au Qtr. 3 cl, 2 2-hr lab. Prereq: 716.

**802 Advanced Physiological Optics II G 5**

Fixation disparity; photochemistry and electrophysiology of photo-receptors; luminosity; color mixture; retinal-cortical transmission; simultaneous contrast; visibility; adaptation; after images.

Wi Qtr. 3 cl, 2 2-hr lab. Prereq: 801.

**803 Advanced Physiological Optics III G 5**

Binocular integration of hue and brilliance, fusional movements, fixation, retinal correspondence, visual perception of figure-ground relations, light, color, illumination, size, shape, direction, distance, and motion.

Sp Qtr. 3 cl, 2 2-hr lab. Prereq: 802.

**808 Advanced Functional Neuroanatomy of the Visual System G 5**

Intense study of the neuroanatomy of the visual system.

Sp Qtr. 3 cl and 2 2-hr lab. Prereq: Enrollment in the College of Optometry or graduate status in phys opt and permission of the dean.

**810 Image Evaluation G 5**

An analysis of the causes of image impairment in the human eye and other optical systems; objective methods of assessing aberrations and blur; methods of image enhancement.

Au Qtr. 5 cl. Prereq: 502 and 613.

**811 Mechanisms Subservicing Color Vision G 5**

Theoretical basis for chromatic adaptation, chromatic contrast and induction, color blindness, and other color phenomena; theory of the laws of color mixture.

Wi Qtr. 5 cl. Prereq: 613.

**812 Advanced Neurophysiology of the Visual System G 5**

The coding and transmission of visual information in the direct and accessory pathways of vertebrates and invertebrates.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: 613, 614, 715, and 716.

**813 Advanced Physiology of the Eye G 5**

Recent developments in the respiration, metabolism, and mechanics of ocular tissues, and the aqueous dynamics of the eye.

Au Qtr. 4 cl, 1 2-hr lab. Prereq: 613 and 614.

**815 Binocular Vision and Perception G 5**

Visual perception: direction, space, and motion; perceptual adaptation; binocular vision and fusion.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 803.

**820 Specification of Visual Stimuli G 5**

Study of visual stimuli and apparatus to control parameters such as intensity, spectral composition, retinal location, and pupil size and location; calibration and practical application.

Sp Qtr. 3 cl, 4-hr lab. Prereq: 801 or permission of instructor.

**894 Group Studies in Physiological Optics G 1-5**

Group studies on special problems in physiological optics.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in phys opt. Repeatable to a maximum of 30 cr hrs.

**999 Research in Physiological Optics G Arr**

Research for thesis on dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Physiology

4196 Graves Hall, 333 West 10th Avenue, 292-5448

**311 Principles of Human Physiology I U 5**

First of a two-quarter sequence covering the following areas of physiology: neuromuscular, heart and circulation, endocrine, brain and special senses, body fluids and kidney, respiration, digestion, temperature control, and metabolism.

Wi Qtr. 4 cl, 1 1-hr lec-disc. Prereq: 2 qtrs chem, Anatomy 200 or equiv; or permission of instructor.

**312 Principles of Human Physiology II U 5**

Continuation of 311.

Sp Qtr. 4 cl, 1 1-hr lec-disc. Prereq: 311 or permission of instructor.

**494 Group Studies in Physiology U 1-5**

Group studies for students in specialized programs.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**601 Organ System Physiology I U P G 5**

First of a two-quarter sequence presenting the following areas of physiology: neuromuscular, heart and circulation, endocrine, brain and special senses, body fluids and kidney, respiration, digestion, temperature control, and metabolism.

Au Qtr. 5 cl. Prereq: Inorganic and organic chem, Physics 111, 112, 113 or equiv, and 1 yr biological sciences, and permission of instructor for undergrads.

**602 Organ System Physiology II U P G 5**

Continuation of 601.

Wi Qtr. 5 cl. Prereq: 601. Normally to be taken directly following 601.

**604 Advanced Physiology I P 4**

First of a 2-qtr sequence covering these physiological areas; neuromuscular central nervous system and special senses, endocrinology and reproduction, cardiovascular, digestion, respiration, body fluids, and kidney.

Au Qtr. 4 cl. Prereq: Open only to students enrolled in the College of Dentistry.

**605 Advanced Physiology II P 4**

Continuation of 604.

Wi Qtr. 4 cl. Prereq: 604 or permission of instructor.

**607 Medical Organ System Physiology I G 4-6**

First of a three quarter sequence presenting physiology from an organ system perspective.

Sp Qtr. 4-6 cl. Prereq: Inorganic and organic chemistry, Physics 111, 112, 113 or equiv and 1 yr of biological sciences and grad standing in physiol or grad standing in a dept in College of Medicine and permission of instructor. A total of 15 cr hrs will be given for the 607-608-609 sequence with a distribution of 4-6 cr hrs each qtr as determined by the instructor.

**608 Medical Organ System Physiology II G 4-6**

Continuation of 607.

Sp Qtr. 4-6 cl. Prereq: 607. Normally to be taken directly following 607.

**609 Medical Organ System Physiology III G 4-6**

Continuation of 608.

Sp Qtr. 4-6 cl. Prereq: 608. Normally to be taken directly following 608.

**617 Experimental Procedures in Physiology I G 1**

First of a three-quarter sequence of experimental physiology with emphasis on experimental demonstration of physiological principles.

Au Qtr. 1 4-hr lab and 1 cl every other week. Prereq or concur: 607. Open only to grad students in dept or by permission of instructor. Enrollment limited to 10. This course is graded S/U.

**618 Experimental Procedures in Physiology II G 1**

Continuation of 617.

Wi Qtr. 1 4-hr lab and 1 cl every other week. Prereq or concur: 607 and 608. Open only to grad students in dept or by permission of instructor. Enrollment limited to 10. This course is graded S/U.

**619 Experimental Procedures in Physiology III G 1**

Continuation of 618.

Sp Qtr. 1 4-hr lab and 1 cl every other week. Prereq or concur: 607, 608 and 609. Open only to grad students in dept, or by permission of instructor. Enrollment limited to 10. This course is graded S/U.

**7481\* Electronic Instrumentation for Physiology U P G 2**

Basic concepts in semiconductor electronics; representative small signal, digital, and integrated circuits, input and output transducers, recording, storage and elementary information processing techniques are studied in the laboratory; emphasis is on representative examples rather than on a comprehensive survey of instruments.

Au Qtr. 1 cl, 1 3-hr lab. Prereq: Grad standing in physiol or permission of instructor. Enrollment limited to 10.

**793 Individual Studies in Physiology U P G 2-18**

Reading, conferences, and laboratory work by individual arrangement with qualified students who desire more intensive and specialized study than is available in other courses.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

**801 Seminar in Physiological Research Topics G 1**

Formal lectures, seminars, and demonstrations by Physiology graduate faculty and visiting scientists, describing and explaining the pertinence of current physiological research.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad 1st yr standing in physiol or permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**850 Seminar in Physiology G 2**

Su, Au, Wi, Sp Qtrs. Repeatable.

**911 Advanced Studies in Physiology**

Su, Au, Wi, Sp Qtrs. Prereq: 601, 602 or 607, and 608; or equivs with written permission of instructor. Quarter schedule of topics to be announced.

**911.06 Temperature Regulation**

Boulant

**911.15 Gastrointestinal Physiology G 3 or 5**

Stephens.

**911.24 Muscle Contraction G 3**

In-depth examination of molecular mechanisms of activation and contraction in muscle. Rall.

**911.25 Membrane Transport G 3**

In depth presentation of the theoretical basis of membrane biophysics and its practical application to cellular excitability.

2 1½-hr cl. Prereq: 600-level course in physiol and permission of instructor.

**911.26 Advanced Topics in Integrative Neurophysiology G 3**

In-depth presentation of the theory and concepts of neural networks and microcircuits.

2 1½-hr cl. Cross-listed in Neuroscience.

**911.27 Advanced Cardiovascular Physiology G 3**

Advanced presentation of cardiovascular topics, including electrical and mechanical properties of the heart; neural control of the CV system; regulation of vascular smooth muscle, microcirculation.

1 1½-hr cl. Prereq: 601 and 602, or equiv with permission of instructor. Enrollment limited to 20. Offered every third year.

**999 Research in Physiology G Arr**

Research for thesis or dissertation purposes only. This course is graded S/U.

## Plant Biology

108 Botany and Zoology Building, 1735 Neil Avenue, 292-8952

**101 Introduction to Plant Biology I: Plants, People, and the Environment U 5**

Plants and their relationships to humans and the biosphere; plant structure and function, growth, and development; practical and economic uses of plants.

Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr rec. Not open to students with credit for 112, or Biology 101 or 113. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

**102 Introduction to Plant Biology II: Plants, People, and the Environment U 5**

Continuation of 101; plant genetics and biotechnology, diversity and evolution, and the importance of plants for the biosphere and for human survival.

Su, Wi, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq: 101. This course is available for EM credit. NS Admis Cond course. BER/GEC/LAR course.

**201 Introduction to Plant Evolution U 5**

An introductory course in plant evolution emphasizing major events and evolutionary changes that have occurred among plants. Taylor.

Wi Qtr. 3 cl, 1 2-hr lab, 2-hr lab project. Prereq: 102 or 112 or Biology 114 or equiv with written permission of instructor. NS Admis Cond course. BER/GEC/LAR course.

**202 Plant Development U 5**

An introductory course in plant development at the organismic level, emphasizing physiology, morphology, and anatomy. Raghavan.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: 101 or 112 or Biology 114. NS Admis Cond course. BER/GEC/LAR course.

**203 Plant Functions in the Environment U 5**

Introduction to physiological ecology, emphasizing photosynthesis as the biological mobilization of solar energy and organic materials for the growth of plants and other organisms. Platt.

Sp Qtr. 1 4½-hr cl (Sat). Prereq: 101 or 112 or equiv. BER/LAC/LAR course.

**210 Local Flora U 5**

A lecture, laboratory, and field course in identifying common Ohio plants; emphasis on taxonomic principles, use of keys and manuals, and field recognition of plants. Crawford.

Su, Sp Qtrs. 3 cl, 2 2-hr labs, several Sat field trips. Prereq: 102 or 112 or Biology 114 or equiv with written permission of instructor. NS Admis Cond course. BER/LAC/LAR course.

**293 Individual Studies U 1-5**

Individual work in the field of the chosen problem.

Su, Au, Wi, Sp Qtrs. Prereq: 102 or 112 or Biology 114, and written permission of instructor. Only 5 cr hrs may count towards a plant bio major. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Group study of topics in plant biology.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs for different topics only.

**300 General Plant Biology U 5**

Plant structure and function; growth and development; diversity, reproduction, and evolution of lower and flowering plants; people, the biosphere, and plant diversity.

Au, Sp Qtrs. 3 cl, 2 2-hr labs. Prereq: Biology 101 or 113. Not open to students with credit for 101 or Hort 201 or 300. Cross-listed in Horticulture. BER/GEC/LAR course.

**General Plant Pathology**

See Plant Path 401.

**413 Introduction to Ecology**

Au, Wi Qtrs. Cross-listed in Zoology. BER/LAC course. NS Admis cond course.

**413.01 Lecture U 3**

Distribution and abundance of species, population dynamics, community ecology, ecosystem dynamics, and applied perspectives.

3 cl. Not open to students with credit for 313 or its subdivisions or Zoology 313 or its subdivisions.

**413.02 Laboratory U 2**

Critique of ecological primary literature, analysis of ecological data, and design and execution of experiments.

2 cl. Prereq or concur: 413.01 or Zoology 413.01. Not open to students with credit for 313 or its subdivisions or Zoology 313 or its subdivisions.

**436 Introductory Plant Physiology U 5**

Topics in plant physiology at the introductory level: diffusion, transpiration, water stress, translocation, enzyme kinetics, photosynthesis, plant growth hormones, tropisms, flowering, fruit development. Cline, Evans, and Hangarter.

Au, Sp Qtrs. 4 cl. Prereq: 101 or 112 or Biology 114; 10 cr hrs in chemistry, or equiv with written permission of instructor.

**General Genetics**

See Mol Gen 500.

**502\* Economic Botany U G 4**

Botany and history of the world's food, spice, drug, and industrial plants. Curtis.

Au Qtr. 3 cl, 1 arr. Prereq: 5 cr hrs in biological sciences.

**597 The Role of Evolution and Plant Diversity in Shaping Our World U 5**

Interaction of plants and their physical environment, past, present, and future, focusing on the historical development of the biosphere and social implications of future changes. Taylor.

Wi Qtr. 2 3-hr cl, 1 2-hr disc. Prereq: 101, Biology 101 or 113, and sr standing; or written permission of instructor.

**611 Higher Aquatic Plants U G 5**

Aquatic plants, other than the algae, of Great Lakes region; field and laboratory work on their identification and ecological and geographical relations.

Su Qtr, given only at Franz Theodore Stone Laboratory, 3 all-day cl. Prereq: 102 or 112 and 15 additional cr hrs in biological sciences.

**612\* Taxonomy of Vascular Plants U G 5**

A laboratory, field, and discussion course concerning the classification of vascular plants; emphasis on taxonomic principles, systems of classification, family characteristics and relationships. Stuessy.

Sp Qtr. 3 cl, 2 2-hr labs, several Sat field trips. Prereq: 210 and 10 additional cr hrs in biological sciences or permission of instructor.

**613\* Evolutionary Processes in Flowering Plants U G 5**

Origin of variation in plants with emphasis on evolutionary processes unique to the flowering plants. Crawford.

Au Qtr. 5 cl.

**617\* Theoretical Ecology I U G 5**

The models, assumptions, and conclusions of the mathematical theory of ecology including stability notions, deterministic and stochastic models, and models for patchy environments.

Wi Qtr. 5 cl. Prereq: 313 or equiv, differential and integral calculus. Not open to students with credit for Zoology 617 or 714. This course is graded S/U. Cross-listed in Zoology.

**620 Community Ecology and Ecosystems****620.01 Community Ecology and Ecosystems U G 5**

A quantitative and descriptive approach to the establishment, development, succession, and dynamics of plant communities and their interrelations with historic, climatic, soil, and biotic factors. Boerner.

Sp Qtr. 3 cl, 1 4-hr lab, several field trips. Prereq: 313 or Zoology 313 or equiv, and 15 additional cr hrs in biological sciences. Not open to students with credit for 620.

**620.02 Essays in Community Ecology and Ecosystems U 2**

Third writing course designed to supplement 620.01; students will develop and revise expository essays covering fundamental principles of community or ecosystem ecology.

Sp Qtr. 1 2-hr cl. Prereq: Second writing course; prereq or concur: 620.01, and permission of instructor. GEC/LAR course.

**621\* Plant Population Ecology U G 5**

Quantitative study of plant population processes, community organization, and ecological methods. Snow.

Au Qtr. 3 cl, 1 4-hr lab, field trips. Prereq: 313, Math 151, and 15 cr hrs in biological sciences.

**622 Plant Genetics and Molecular Biology U G 5**

An in-depth survey of classical and molecular genetic systems in plants with emphasis on current research topics. Davis and Scholl.

Wi Qtr. 3 cl, 1 2-hr cl. Prereq: Biochem 511 and Mol Gen 500 or 501. Not open to students with credit for Mol Gen 622 or 632. Cross-listed in Molecular Genetics.

**625\* Paleobotany U G 5**

Structure, phylogeny, and stratigraphic distribution of representative fossil plants. Taylor.

Sp Qtr. 3 3-hr lec/lab; field trips. Prereq: Jr standing with at least 25 cr hrs in biological sciences, or sr standing in geol sci, or equiv with written permission of instructor.

**626\* Palynology U G 5**

Survey of pollen grains and spores including their identification using diagnostic features, distribution through time, and biological importance. Taylor.

Sp Qtr. 2 cl, 1 3-hr lab, 1 2-hr lab-research project arr. Prereq: Jr standing and 15 cr hrs in either biological or geological sciences.

**630 Plant Physiology U G 3**

Advanced study of plant physiology; solutions, diffusion, osmotic quantities, transpiration, absorption and translocation of water, protein metabolism, enzymes, and respiration. Cline, Evans, and Hangarter.

Au Qtr. 3 cl. Prereq: 101 or 112 or Biology 114, Chem 242 or 252 or Biochem 511, or written permission of instructor.

**631 Plant Physiology U G 3**

Advanced study of plant physiology; pigments, photosynthesis, carbohydrate and fat metabolism, absorption of mineral salts, translocation of solutes, regulation of plant growth, and development. Cline, Evans, and Hangarter.

Wi Qtr. 3 cl. Prereq: 101 or 112 or Biology 114, Chem 252 or Biochem 511, or written permission of instructor.

**632\* Physiological Ecology of Plants U G 5**

Physiological relationships between light, water, and mineral nutrients and plant growth including plant-insect and plant-microbe interactions. Curtis.

Au Qtr. 3 cl, 1 4-hr lab. Prereq: 313 or Zoology 313, and 15 cr hrs in biological sciences.

**635 Plant Biochemistry U G 5**

The biochemistry of plants, emphasizing the similarities and differences as compared to other life forms.

Au Qtr. 5 cl. Prereq: Biochem 511 or 614. Not open to students with credit for Biochem 631 prior to Wi Qtr 1988 or for Biochem 635. Cross-listed in Biochemistry.

**636 Mineral Nutrition of Plants U G 3**

Process of uptake, transport, and metabolism of mineral nutrients, with emphasis on nitrogen, and on process at the tissue and cellular level. Streeter.

Au Qtr. 2 2-hr cl. Prereq: Biochem 511, Plnt Bio 436 or 630, and 643 recommended. Not open to students with credit for Agronomy 636. Cross-listed in Agronomy.

**638\* Morphology of Vascular Plants U G 5**

Morphology, anatomy, and evolution of vascular plants. Taylor.

Au Qtr. 3 cl, 3 2-hr labs. Prereq: 102 or Biology 114, and 15 additional cr hrs in biological sciences.

**641\* Morphology of Angiosperms U G 3**

A lecture-discussion course on reproductive processes and mechanisms in angiosperms with emphasis on floral morphology, embryology, and formation of fruits and seeds. Raghavan.

Wi Qtr. 4 cl. Prereq: 101 or 112 or Biology 114, and 15 additional cr hrs in biological sciences; or permission of instructor.

**643\* Plant Anatomy U G 5**

The structure, function, and development of cells, tissues, and organs of vascular plants. Sack.

Wi Qtr. 2 cl, 3 2-hr labs. Prereq: 101 or 112 or Biology 114, and 10 cr hrs in biological sciences; or permission of instructor.

**644+\* Algae U G 5**

A general course covering identification, growth, reproduction, evolution, distribution, and economic importance of the algae. Floyd.

Au Qtr. 2 3-hr cl and 1 2-hr cl. Prereq: 102 or 112 or Biology 114, and 15 additional cr hrs in biological sciences or written permission of instructor.

**647 Plankton U G 5**

Examination of phytoplankton and zooplankton communities, emphasizing population dynamics, seasonality, predation, and productivity; lab emphasis on identification and quantitative methods for collecting and enumerating plankton.

Au Qtr. 2 cl, 2 3-hr labs, 1 required weekend field trip to Lake Erie. Occasionally offered Su Qtr at Franz Theodore Stone Lab. Prereq: English 110 or 111 or equiv, and 20 cr hrs in biological sciences; Zoology 652 or 655 recommended. Not open to students with credit for Zoology 647. Cross-listed in Zoology. GEC/LAR course.

**648\* Plant Cell Structure and Function U G 3**

Plant cell biology, structure of plant cells as revealed by electron microscopy, functions of components of plant cells, and relationships between structure and function. Floyd and Sack.

Au Qtr. 3 cl. Prereq: Jr standing with at least 20 cr hrs in biological sciences, or 635, or permission of instructor.

**656 Ecosystems of the World: Temperate, Boreal, and High Latitude Ecosystems U G 5**

Intermediate course in ecology emphasizing structure-function relations at broad scales incorporating soil development, geomorphology, climate, and human impact into analyses of major temperate, boreal, and polar ecosystems. Boerner.

Wi Qtr. 1 2-hr cl, 1 2 1/2-hr cl. Prereq: Sr or grad standing; 413.01 or equiv, and 20 additional hrs in natural science or natural resources, or permission of instructor. Not open to students with credit for Nat Res 656. Cross-listed in Natural Resources.

**Cytologic Preparations in Electron Microscopy**

See Micrbol 670.

**693 Individual Studies U G 1-5**

Problems may be selected in the fields of paleobotany, taxonomy, morphology, morphogenesis, anatomy, phycology, physiology, ecology, genetics, or cytology.

Su, Au, Wi, Sp Qtrs. Prereq: 102 or 112 or Biology 114, and 15 additional cr hrs in biological sciences. Not more than 5 cr hrs may be counted toward an undergrad major in plnt bio. Repeatable to a maximum of 15 cr hrs for undergrad. This course is graded S/U.

**694 Group Studies U G 1-5**

Group study of special topics in plant biology.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

## 292 Plant Biology

### 698 Study Tour U G 1-15

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic

698.02 Foreign

### 714\* Theoretical Ecology II U G 5

Continuation of 617 with emphasis on populations in patchy environments, stochastic models, and nonequilibrium theory.

Wi Qtr. 5 cl. Prereq: 617 or Zoology 617 or permission of instructor. Not open to students with credit for Zoology 714. This course is graded S/U. Cross-listed in Zoology.

### H783 Honors Research U 3-5

Problems may be selected in the fields of paleobotany, taxonomy, morphology, morphogenesis, anatomy, phycology, physiology, or ecology.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing, a grade of A in at least half of the plant bio courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Failure to receive a mark of S in this course is a disqualification for graduation *with distinction*. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 795 Special Topics in Plant Biology U G 1-3

Lecture/discussion in a seminar format of publications, current research, or research techniques in plant biology.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 25 cr hrs in biological sciences at 200 level or above. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 801 Seminar in Systematic and Evolutionary Plant Biology G 2

Discussion of advanced topics in systematic and evolutionary plant biology. Crawford, Floyd, Stuessy, and Taylor.

Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

### 802 Seminar in Environmental Plant Biology G 2

Discussion of advanced topics in environmental plant biology. Boerner, Curtis, and Snow.

Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

### 803 Seminar in Developmental and Regulatory Plant Biology G 1-3

Discussion of advanced topics in developmental and regulatory plant biology. Cline, Davis, Evans, Hangarter, Jensen, Raghavan, Sack, and Sayre.

Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

### 810\* Experimental Taxonomy G 5

Biosystematic categories, population analysis of mass collections, individual variations, hybridization, and introgression in relation to the methods and materials of experimental taxonomic research. Stuessy.

Au Qtr. 3 cl, 2 2-hr labs, several Sat field trips. Prereq: Permission of instructor.

### 812\* Plant Chemosystematics G 5

Examination of the use of chemical data in studying plant relationships and evolution; independent research. Crawford.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: Introductory course in organic chemistry or biochemistry, and 30 cr hrs in biological sciences.

### 833\* Advanced Plant Physiology: Growth G 3

The physiology of growth; special attention given to the interrelated effects of plant hormones and environmental factors on the growth process in plants. Evans.

Sp Qtr. 3 cl. Prereq: Biochem 511, and 10 additional cr hrs in biological sciences; or permission of instructor.

### 834\* Advanced Plant Physiology: Energetics of Plant Growth G 3

Plant bioenergetics; structure and function of the photosynthetic apparatus, mechanisms of energy transduction in photosynthetic, and oxidative phosphorylation, forces driving solute transport, plant productivity. Hangarter.

Sp Qtr. 3 cl. Prereq: 630 and 631, Biochem 511, and Physics 113; or permission of instructor.

### 835\* Advanced Plant Physiology: Plant Reproduction and Development G 3

Physiology of flowering, fruit and seed development, vegetative reproduction, dormancy, apical dominance, abscission, and senescence. Cline.

Sp Qtr. 3 cl. Prereq: 631 or equiv and Biochem 511.

### 836 Mechanisms of Plant Development G 3

Discussion of current research topics on the mechanisms of plant development, including such topics as genetic control and the role of biochemical and environmental signals. Hangarter.

Sp Qtr. 2 1½-hr cl. Prereq: 436 or 622 or 631 and Mol Gen 500 or 622; or permission of instructor.

### 890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2

Students will present oral reports and lead discussion on research progress in specific areas of molecular, cellular, and developmental biology.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U. Given cooperatively by Microbiology, Molecular Genetics, Plant Biology, and Zoology.

### 891 Interdepartmental Seminar in Environmental Biology G 2

Selected topics treating the environmental aspects of organisms, populations, and ecosystems as they may relate to time, space, and human activities.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U. Given cooperatively by Entomology, Microbiology, Plant Biology, and Zoology.

### 892 Interdepartmental Seminar in Plant Physiology G 1

Students will present seminars on their research or related topics in plant physiology and/or attend seminars by local and visiting researchers.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs, including cr hrs earned in Agronomy 892, Biochem 892, Fd Sc&Nu 892, and Hort 892. Cross-listed in Agronomy, Biochemistry, Food Science and Nutrition, and Horticulture. This course is graded S/U.

### 998 Research in Plant Biology: Thesis G Arr

Research for master's thesis only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

### 999 Research in Plant Biology G Arr

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Plant Pathology

201 Kottman Hall, 2021 Coffey Road, 292-1375

### 201 Social Impact of Plant Diseases in Shaping Human Society U 2

Review of the interactions of plant pathogens and the social, economic, and historic consequences for civilization. Curtis.

Sp Qtr. 1 2-hr cl.

### 401 General Plant Pathology U 5

An introduction to diseases of plants. Rhodes.

Au Qtr. 3 cl, 2 2-hr lab. Prereq: Botany 112.

### 489 Work Experience in Plant Pathology U 1-3

Supervised practical experience during employment with an approved organization; work will deal with certain aspects of plant disease control; a final written report is required.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. Open only to dept majors.

### 501 Diseases of Ornamentals U G 3

Biology and integrated control of important diseases of ornamental plants. Nameth.

Sp Qtr. 2 2-hr cl. Not open to students with credit for 610.

### 510 Forest Pathology U G 3

Major types of forest tree diseases with emphasis on diagnosis, etiology, epidemiology, and control. Rhodes.

Sp Qtr. 2 cl, 1 2-hr lab. Prereq: Botany 112 or Plant Bio 101.

### 530 Plant Responses to Environmental and Biotic Stresses U G 3

A modern treatment of the physiological reactions of plants to stressful conditions including drought, salinity, temperature extremes, toxicities and infections by bacteria, fungi and viruses. Garraway.

Sp Qtr. 3 cl. Prereq: Sr or grad standing and Plant Biology 436, or permission of instructor.

### 597 Societal Issues: Pesticides, Alternatives, and the Environment U 5

Consideration of the political, ethical, and economic issues related to pesticide usage, atmospheric pollution, and release of genetically engineered organisms. Deep.

Wi Qtr. 2 2-hr cl, 1 1-hr cl. Prereq: Sr standing. GEC/LAR course.

**600 Introduction to Bacterial and Viral Pathogens of Plants U G 5**

Introduction to bacterial and viral pathogens and the diseases they cause in plants. Coplin and Nameth.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: 401 or Micrbiol 521 or permission of instructor.

**601 Fungal Pathogens of Plants U G 5**

An in-depth study of the nature of plant pathogenic fungi and the diseases they cause. Deep.

Wi Qtr. 3 cl. 2 2-hr lab. Prereq: 401.

**602\* Plant Disease Epidemiology U G 3**

Disease development in plant populations with emphasis on monitoring, modeling, and predicting rates of development. Madden.

Sp Qtr. 2 2-hr cl. Prereq: 401, Math 116, and elementary statistics; or permission of instructor.

**603 Plant Disease Management U G 4**

Theory and practice of plant disease management; emphasis on integration of cultural, biological, chemical, and plant breeding techniques.

Sp Qtr. 2 2-hr cl. Prereq: 401 or equiv, or permission of instructor.

**612\* Turfgrass Diseases U G 3**

A detailed study of the diseases of turf grasses, factors influencing disease severity, specific measures for disease control.

Au Qtr. 2 2-hr cl. Prereq: 401.

**613 Integrated Management of Turfgrass Insects, Diseases, and Weeds U G 4**

Identifying the most appropriate genetic, cultural, biological, and chemical programs for reducing pest damage.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Agronomy 413 and 422; Plnt Pth 401. Not open to students with credit for Agronomy 613. Cross-listed in Agronomy.

**615 Economic Plant Pathology U G 3**

Major diseases of field, fruit, and vegetable crops with emphasis on etiology, epidemiology, and control.

**615.01\* Fruit and Vegetable Crop Diseases**

Ellis and Riedel.

Wi Qtr. 2 2-hr cl. Prereq: 401 or equiv. Not open to students with credit for 671, 672, or 675.

**615.02 Field Crop Diseases**

Deep.

Au Qtr. 2 2-hr cl. Prereq: 401 or equiv. Not open to students with credit for 671.

**636\* Plant Nematology U G 3**

Bionomics and control of plant-parasitic nematodes. Riedel.

Wi Qtr. 3 cl. Several field trips. Prereq: 401. Not open to students with credit for 836.

**H683 Honors Projects U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

**685\* Field Plant Pathology U G 2**

Study of plant diseases in the field with emphasis on diagnosis and epidemiology; supplementary laboratory work. Nameth.

Su Qtr. 1 4-hr cl arr. Prereq: 401 or 615, and permission of instructor.

**693 Individual Studies U G 1-5**

Problems may be selected in the various areas of plant pathology.

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**694 Group Studies U G 2, 3, or 5**

Special group studies of a selected area in plant pathology not provided in other courses.

Su, Au, Wi, Sp Qtrs. Prereq: Sr or grad standing. Repeatable to a maximum of 10 cr hrs.

**730 Fungal Parasitism of Plants U G 4**

Survey of physiological and biochemical processes associated with penetration and parasitism of host plants by fungi; mechanisms of regulation of disease susceptibility and resistance. Garraway.

Au Qtr. 2 2-hr cl. Prereq: Biochem 511 or permission of instructor. Not open to students with credit for 830.

**832\* Plant-Bacteria Interactions G 5**

Bacterial pathogens and symbionts affecting plant health and productivity; molecular, cellular, and environmental determinants of plant-microbe interactions and successful biological control. Bauer and Coplin.

Sp Qtr. 3 2-hr. cl. Prereq: 600 or Micrbiol 520, Mol Gen 501 or Micrbiol 581, and Biochem 511; or permission of instructor. Not open to students with credit for Agronomy 832. Cross-listed in Agronomy.

**838\* Plant Virology G 3**

Plant virus detection, identification, structure, purification, serology, replication, transmission, vector relationships, variability, nomenclature and classification, and virus disease symptoms, physiological effects, epidemiology, economic importance, and control. Gordon.

Sp Qtr. 3 1-hr cl. Prereq: 600 or equiv, or permission of instructor.

**839\* Plant Virology Laboratory G 2**

Experimental approach to plant virus detection and identification; structure, purification serology, replication, transmission, vector relationships, variability, nomenclature and classification, virus disease symptoms, physiological effects, and epidemiology. Gordon.

Sp Qtr. 2 2-hr labs. Prereq or concur: 838, or permission of instructor.

**842\* Biochemistry of Plant Responses to Infection G 3**

Introduction to the molecular and genetic basis of plant responses to microbial infection and symbiosis. Graham.

Wi Qtr. 2 2-hr cl. Prereq: Biochem 511 and 521 or equivs, one 600-level course in plant physiology or plant biochemistry, or written permission of instructor. Biochem 631 or Plnt Bio 630 or 631 recommended.

**861 Physiology of Fungi G 4**

Physiology and nutrition of fungi in relation to growth, reproduction, and metabolite production. Garraway.

Wi Qtr. 2 2-hr cl. Prereq: Biochem 511 or Micrbiol 509 or permission of instructor.

**995 Seminar G 1**

Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Polish

232 Cunz Hall, 1841 Millikin Road, 292-6733

**101 Elementary Polish I**

Introduction to Polish; development of listening, reading, speaking, and writing skills.

Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

5 cl. Students must register for and complete 5 cr hrs during the qtr.

**101.51 Individualized Track U 1-5**

Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**102 Elementary Polish II**

Continued study of Polish; development of listening, reading, speaking, and writing skills.

Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

5 cl. Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor. Students must register for and complete 5 cr hrs during the qtr.

**102.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 101.01 or 5 cr hrs of 101.51 or permission of instructor. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.



**103 Intermediate Polish I**

Continued study of Polish; development of listening, reading, speaking, and writing skills.

Not open to students with credit for 103; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

**103.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 102.01 or 5 cr hrs of 102.51 or permission of instructor. Students may register for 102.51 and 103.51 concurrently with permission of instructor. Students who complete 5 cr hrs before the end of the qtr may proceed to 104.51. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**104 Intermediate Polish II**

Readings, oral and written practice, and grammar review.

Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

**104.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 103.01 or 5 cr hrs of 103.51 or permission of instructor. Students may register for 103.51 and 104.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hr during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**111\* Intensive Intermediate Polish U 5 or 10**

An intensive course that combines the content of 103 and 104; balanced use of the four basic skills: reading, oral comprehension, speaking, and writing.

Sp Qtr. 5 2-hr cl. Prereq: 102. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 or 112 may not register for more than 5 cr hrs, but must complete the entire course. Course intended for students who wish to expedite the completion of the language requirement. GEC/LAR course.

**300+ Masterpieces of Polish Literature U 5**

Reading of Polish poetry and prose including that of Nobel Prize winning authors.

4 cl. Prereq: 10 cr hrs in literature courses at the 200 level or above, or permission of instructor. Given in English but students majoring in Slavic will do prescribed portions of the reading in the original.

**405+\* Polish Conversation and Composition**

Reading texts of moderate difficulty, conversation, and simple compositions.

Not open to students with credit for 605; or to native speakers of this language through regular course enrollment or EM credit.

**405.51 Individualized Track U 1-5**

Prereq: Grade of B- or above in 104 or 104.01 or 5 cr hrs in 104.51 or permission of instructor. Not open to students with credit for 605. Students may register for 104.51 and 405.51 concurrently with the permission of the instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one credit hr to the next with proficiency at the level of 80% required for advancement.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**407+\* Polish Conversation and Composition**

Reading from modern Polish literature, practice in writing and speaking.

Not open to students with credit for 606; or to native speakers of this language through regular course enrollment or EM credit.

**407.01 Classroom Track U 5**

5 cl. Prereq: 504.01 or 605 or 5 cr hrs in 405.51 or permission of instructor.

**407.51 Individualized Track U 1-5**

Prereq: B- or above in 605 or 405.01 or 5 cr hrs in 405.51 or permission of instructor. Not open to students with credit for 606. Students may register for 405.51 and 407.51 concurrently with permission of instructor. Students register for and complete 1 to 5 cr hrs during the qtr. Progress is sequential from one credit hr to the next with proficiency at the level of 80% required for advancement.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**580+ Reading Polish I****580.51 Individualized Track U G 1-5**

Readings in contemporary sources; development of reading skills with some attention to grammar, sentence structure, and listening comprehension.

Su, Au, Wi, Sp Qtrs. Prereq: 407.01 or 5 cr hrs in 407.51 or permission of instructor.

**581+ Reading Polish II****581.51 Individualized Track U G 1-5**

Continuation of 580.51; development of reading skills with emphasis on word formation and sentence and discourse structure; readings on different facets of Polish life.

Arr. Prereq: 5 cr hrs of 580.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.

**582+ Reading Polish III****582.51 Individualized Track U G 1-5**

Continuation of 581.51; further development of reading skills; readings on different facets of Polish life.

Arr. Prereq: 5 cr hrs of 581.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 581.51 and 582.51 concurrently with permission of instructor.

**630+ Polish Drama U G 5**

Modern Polish drama from neo-romantic to the absurd and grotesque.

4 cl. Prereq: 10 cr hrs in literature courses at the 200 level or above, or permission of instructor. Given in English, but students majoring in Slavic will do portions of the readings in the original.

**631+ Polish Prose Fiction U G 5**

Modern Polish fiction as related to sociopolitical problems.

4 cl. Prereq: 10 cr hrs in literature courses at the 200 level or above, or permission of instructor. Given in English, but students majoring in Slavic will do portions of the readings in the original.

**693 Individual Studies U G 2-10**

Prereq: Permission of dept chairperson. Repeatable to a maximum of 20 cr hrs, including cr hrs in 693.40. This course is graded S/U.

**694 Group Studies U G 2-10**

Prereq: Permission of chairperson. Repeatable to a maximum of 15 cr hrs.

**993 Individual Studies G 2-10**

Prereq: Permission of chairperson. Repeatable to a maximum of 40 cr hrs, including cr hrs in 993.20, 993.30, 993.40, and 993.50. This course is graded S/U.

## Political Science

223 Derby Hall, 154 North Oval Mall, 292-2881

**100 Introduction to Comparative Politics U 5**

Introduction to major types of political systems found in the world today; examination of similarities and differences among Western democratic, communist, and Third World political systems.

Au, Wi, Sp Qtrs. BER/GEC/LAR course.

**101 Introduction to American Politics U 5**

Introduction to American politics, the institutions and processes which create public policy, the strengths and weaknesses of the American political systems.

Su, Au, Wi, Sp Qtrs. 5 cl. H101 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 300. BER/GEC/LAR course. SS Admis Cond course.

**145 The Politics of Global Problems U 5**

The politics of scarcity and security; concepts including power, national interest, cooperation, and expansion applied to global relations in energy, food, technology, and war.

Su, Au, Wi, Sp Qtrs. H145 (honors) may be available to students enrolled in an honors program or by permission of instructor. Not open to students with credit for 105. BER/GEC/LAR course.

**165 Introduction to Politics U 5**

Introduction to politics: political issues, political power, democracy, authoritarianism and totalitarianism, basic political institutions, political ideas, and global politics.

Su, Au, Wi, Sp Qtrs. 5 cl. H165 (honors) may be available to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course. SS Admis Cond course.

**201 Introduction to Political Behavior U 5**

Focus on concepts such as attitude, role, and group and their application in such areas as voting behavior and political participation.

5 cl. H201 (honors) may be available to students enrolled in an honors program or by permission of instructor. BER/GEC/LAR course. SS Admis Cond course.

**202 Politics in Contemporary Societies U 5**

The politics of contemporary nations, including such topics as political change, party systems, issues in post-industrial societies, political violence, conflict resolution, and policy making.

5 cl. BER/LAC/LAR course. SS Admis Cond course.

**210 Modern Political Ideologies U 5**

Introductory survey of modern political ideologies: capitalism, socialism, communism, anarchism, fascism; consideration of both the justifications of ideologies and their implications for political life.

5 cl. H210 (honors) may be available to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course. SS Admis Cond course.

**245 The United States in World Politics U 5**

The role of the United States in world politics since the Second World War, emphasizing structural change in economic and political-military relations. Su, Au, Wi, Sp Qtrs. Not open to students with credit for 215. BER/GEC/LAR course. SS Admis Cond course.

**294 Group Studies U 1-5**

Su, Au, Wi, Sp Qtrs. 5 cl. Repeatable to a maximum of 10 cr hrs.

**300 American Politics and Policy Making U 5**

An examination of American political institutions and the policy-making process.

5 cl. Not open to students with credit for 101. BER/LAC/LAR course.

**305 Introduction to Public Policy U 5**

Introduction to the workings of policy-making processes within governments, and the use of social science reasoning to evaluate and improve the content of policies.

5 cl.

**345 Interpreting International Politics U 5**

An examination of the nature and determinants of major phenomena in international politics such as crises, alliances, integration, interdependence, subversion, war and conflict resolution processes.

5 cl. BER/LAC/LAR course.

**367 Second Writing Course U 5**

GEC/LAR course.

**367.01 Contemporary Issues in American Politics**

Discussion of and critical writing about controversies in contemporary American politics; aimed at fostering analytical abilities in reading comprehension, oral, and written expression.

Au Qtr. 2 2-hr cl or 5 cl. Prereq: 101 or 300 or permission of instructor, English 110 or 111, and soph standing. H367.01 (honors) may be available to students enrolled in an honors program or by permission of instructor.

**501 The American Presidency U G 5**

An examination of the American presidency, emphasizing the contemporary role of the president, the institutionalized presidency, and theories of presidential behavior.

5 cl.

**502 Campaign Politics U G 5**

The organization and strategy of American political campaigns; practical politics seen in the light of knowledge about political behavior and public opinion.

5 cl.

**503+ Survey Research in Political Science U G 5**

The conducting of public opinion polls; participation in a public opinion survey.

4 cl.

**504 Black Politics U 5**

Economic, political, and social constraints on the development of black political power; the efforts made by black people in recent times to organize for effective political action.

5 cl. Not open to students with credit for Black St 504. Cross-listed in Black Studies.

**505 Urban Government U G 5**

Introduction to the governance of urban communities in the United States.

5 cl.

**506+ Ohio Politics U G 5**

Examination of state politics with special reference to Ohio.

5 cl.

**507 American State Politics U G 5**

Comparative analysis of politics in the American states.

5 cl. Prereq: 101 or 300 or permission of instructor. Not open to students with credit for 604.

**512\* Women and Politics U G 5**

An examination of women's participation in political activity, including changes over time in women's political roles and comparison with the roles of men.

5 cl.

**514 Women and the Law U G 5**

An examination of the legal status of women and the ways in which law affects the situation of women in American society.

5 cl.

**516 Judicial Politics U G 5**

Analysis of the roles of judges and lawyers as participants in the American political process; analysis of courts as political institutions.

5 cl.

**517 Legislative Politics U G 5**

Analysis of legislatures and legislators, with a focus on the U.S. Congress and some attention to state legislatures and representative assemblies in other countries.

Au, Wi Qtrs. 5 cl. Prereq: 101 or 300 or permission of instructor. Not open to students with credit for 617.

**519 Civil Liberties in the Courts U G 5**

An examination of civil liberties decisions by American courts, their legal and political bases, and their effects on government and society.

5 cl.

**520 The American Constitution and Governmental Powers U G 5**

Assessment of the contemporary realities of U.S. governmental authority as interpreted by the judiciary; emphasis on judicial review, case and controversy requirements, and legislative and executive power.

5 cl. Not open to students with credit for 694 Sp Qtr 1979 or Sp Qtr 1980.

**530 Politics of Post-Communist Societies in Eastern Europe U G 5**

Systematic comparison of the sources, dynamics, and outcomes of political, economic, and social transformations in the former Communist countries of Eastern Europe.

5 cl.

**533 Soviet and Post-Soviet Politics U G 5**

Survey of the politics of the successor states of the USSR with the emphasis on democratization, economic reform, institutional development, elites, mass behavior and ideology.

3 1½-hr cl. Not open to students with credit for 630.

5 cl.

**535 Government and Politics of the Industrialized World U G 5**

Analyses of politics of the United States, Western Europe, and Japan regarding contemporary problems of inequality, regime instability and conflict, value change and the environment.

5 cl.

**537 Government and Politics of China U G 5**

A study of the contemporary political process of Communist China; considerable time will be spent on an analysis of recent political change in China and the process of revolution.

5 cl. Not open to students with credit for 637.

**540+ Latin American Government and Politics U G 5**

A study of political processes, institutions, and groups in Latin America, with emphasis on constitutional, geographical, social, and economic environments in which they operate.

5 cl. Not open to students with credit for 640.

**541 Government and Politics of the Third World U G 5**

A general introduction to the theoretical and substantive literature dealing with the historical development and contemporary characteristics of the new states of Asia and Africa.

5 cl.

**551 The United Nations System in Global Problem Solving U G 5**

Activities and potential of the United Nations system in promoting economic well-being, environmental management, resource sharing, social justice, and control of violence.

5 cl.

**553 Political Analysis of International Economic Relations U G 5**

Examines the relationship between political and economic events in the international system; topics include global interdependence, inequality, scarce resources, periphery nation strategies.

5 cl. Not open to students with credit for 653 or 753.

**555+ Soviet and Post-Soviet Foreign Policy U G 5**

Basic concepts about, and choices in Soviet and post-Soviet foreign policy; development and presentation of patterns of relations with key nations; major problems in future relationships.

2 2-hr cl. Not open to students with credit for 655.

**560 Regional Patterns in International Politics U G 5**

Examination of ideological, institutional, and foreign political patterns in particularized regions, such as sub-Saharan Africa, Arab Middle East, Southeast Asia.

5 cl. Repeatable to a maximum of 15 cr hrs.

**571 Political Theories of Democracy U G 5**

An examination of theories of democracy, focusing on normative and descriptive dilemmas such as participation versus liberty in democratic societies.

5 cl.

**573 American Political Ideas U G 5**

An analysis of American ideas on law and government, authority and liberty, oligarchy and democracy.

5 cl. BER course.

**585 Techniques of Political Analysis U 5**

Introduction to research design, nature of data, its generation and analysis; analysis of political variables.

5 cl. Prereq: One course in polit sc at the 300 level or above. GEC course.

**589 Student Internship in Politics and Public Policy U G 1-15**

Combines experience in political institutions or policy processes with analysis of that experience in light of relevant scholarly literature.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs; including cr hrs in 689.

**590 Topics in Political Science U G 3-5**

Selected issues and topics in American, international, or comparative politics, political theory or public policy; topics vary by section and instructor.

Repeatable to a maximum of 10 cr hrs.

**593 Individual Studies U G 1-15**

Students will devote their time to special projects including papers, exams, and practical political experience.

Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**H596 Honors Seminar in Political Science U 3-5**

Intensive study of selected political science topics and issues in seminar format; topics vary.

Prereq: Enrollment in an honors program or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**597 Issues of the Contemporary World U 5**

Prereq: Sr standing. GEC/LAR courses.

**597.01 Interdependence and Nationalism in World Politics**

An examination of the relationships of the USA, USSR, and other industrialized countries have with each other and nations in the Third World; focus on the potential for cooperation and conflict.

Sp Qtr. 3 1 1/3-hr cl or 2 2-hr cl or 5 cl. Not open to students with credit for 350.

**597.02 Political Problems of the Contemporary World**

Critical political problems of industrialized and Third World societies, including governmental legitimacy, conflict and violence, social welfare, equality, and economic development.

Au, Wi, Sp Qtrs. 5 cl. H598.02 (honors) may be available to students enrolled in an honors program or by permission of instructor. Not open to students with credit for 325.

**H597.03 Interdisciplinary Perspectives on Current Issues**

Team-taught interdisciplinary and cross-cultural course on the relations among politics, ethics, rhetoric, and law as they confront current practical issues.

Sp Qtr. 2 2-hr cl. Not open to students with credit for English H597.03 or Philos H597.03. Cross-listed in English and Philosophy.

**General Prerequisites for Courses Numbered 600**

Unless otherwise indicated, the prerequisites for 600-level courses are two courses in political science, or the consent of the instructor.

**601 Advanced Presidential Politics U G 5**

Analysis of recent research on the presidency; methods of studying the presidency.

Wi Qtr. 2 2-hr cl. Prereq: 501 or grad standing or permission of instructor.

**603 Public Opinion U G 5**

Origins and nature of political attitudes; the content of public opinion; the public's influence on policy-making.

Wi Qtr. 5 cl.

**608\* Ethnic Politics in the American Cities U G 5**

Group conflict along ethnic lines in major American cities: factors contributing to group cohesion in politics; strategies and resources for exercising power through collective political action.

5 cl.

**610+ Executive and Bureaucratic Politics U G 5**

Introduction to the roles and behavior of executives and bureaucrats in the formulation and implementation of public policy in the United States.

5 cl.

**612 Political Leadership U G 5**

Establishment of a working definition of political leadership, investigation of recruitment of leaders, analysis of major functions political leaders perform, and assessment of consequences of political leadership.

Sp Qtr. 2 2-hr cl. Prereq: 100 or 101 or 300 or permission of instructor. Not open to students with credit for 510.

**614 Urban Politics U G 5**

The study of political problems facing the cities: including community power, poverty, welfare, urban renewal, urban education, law enforcement, and violence.

5 cl.

**627 Government and Politics of Western Europe U G 5**

Systematic comparison of political phenomena and governmental institutions within West European societies.

5 cl. Prereq: Permission of instructor for second 5 cr hrs. Repeatable to a maximum of 10 cr hrs.

**629+ Analysis of 20th-Century Problems in Cross-National Perspective U G 5**

Studies of contemporary political phenomena from a comparative perspective, including instability-stability in parliamentary systems, revolution, urban and local politics, national integration, and other topics.

Repeatable to a maximum of 15 cr hrs.

**635+ Government and Politics of Japan U G 5**

The government and politics of Japan, with special emphasis being given to the impact of cultural and social patterns on the processes of government with imported political institutions.

5 cl.

**636 Southeast Asia U G 5**

Governments and politics of the Philippines, Indonesia, Indo-China, Malaysia, Thailand, and Burma; contemporary problems of this region in relation to world politics.

5 cl.

**653 Politics of the Modern World Economy U G 5**

Institutions and processes which define the contemporary global economy; their political origins and consequences as interpreted by competing schools of thought in political economy.

Wi Qtr. 5 cl. Not recommended to students with credit for 553. Not open to students with credit for 753.

**670 Political Theory: Socrates to Machiavelli U G 5**

The study of major works by political theorists, including Plato, Aristotle, Cicero, Augustine, Aquinas, Machiavelli, and others, in ancient and medieval times.

5 cl.

**671 Political Theory: Machiavelli to Hume U G 5**

The study of major works by political theorists, including Machiavelli, Hobbes, Locke, Rousseau, Hume, and others, from the Renaissance into the 18th century.

5 cl.

**672 Political Theory: Hume to Marx U G 5**

The study of major works by political theorists, including Hume, Bentham, Kant, Hegel, Mill, Marx, and others, before and after the French Revolution.

5 cl.

**673 Political Theory: 20th Century U G 5**

The study of major works by political theorists in the 20th century.

Su Qtr. 5 cl.

**674 Political Participation and Voting Behavior U G 5**

A study of political participation and its correlates, determinants of the vote decision, and analysis of recent American elections.

5 cl.

**675+ American Political Parties U G 5**

Theories of political parties, party organization, individual voting behavior, nomination and electoral politics, the party in government.

5 cl.

**678 Political Decision-Making and Public Policy U G 5**

Comparative analysis of decision-making processes of contemporary nations considering the welfare, education, economic, and environmental policy arenas.

3 cl, 1 lab. Not open to students with credit for 578.

**679 Policy Analysis U G 5**

An analysis of the policy process emphasizing the determinants of public policy, theories of public choice, and the implementation, impact, and evaluation of policy decisions.

5 cl.

**680 Models of Politics U G 5**

An introduction of major approaches used in modelling politics, including social choice, game theory, and probability models.

Au Qtr. 5 cl.

**684 Introduction to Political Science Research Methods U G 5**

Introduction to political science research with emphasis on survey and experimental designs, data generation techniques, data processing, and computer utilization.

2 2-hr cl. Prereq: Grad standing in polit sc or permission of instructor.

**685 Methods of Quantitative Analysis: Elementary U G 5**

Explication, interpretation, and application of techniques for quantitative analysis of political data; descriptive and inferential statistics, with emphasis on bivariate analysis.

5 cl.

**686 Methods of Quantitative Analysis: Intermediate U G 5**

Descriptive and inferential statistics with emphasis on multivariate analysis; additional topics offered as desired and possible: scaling, index construction, sampling, measurement reliability.

5 cl. Prereq: 685.

**694 Contemporary Political Problems U G 3-5**

Prereq: Sr standing and 15 cr hrs in polit sc. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

*Enrollment in 700-level courses is limited to graduate students or others with written permission of the instructor only.*

**700+ Basic Theories in the Study of American Politics U G 5**

Examination of basic concepts and approaches; consideration of methodological and substantive problems encountered at various levels of analysis.

2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**Advanced Topics in National Security**

See NSP Std 702.

**703+ Readings in Public Opinion U G 5**

Intensive analysis of literature on selected topics in public opinion.

2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**704 Readings in State and Local Politics U G 5**

Intensive review of selected aspects of the literature on state and local politics in the United States.

2 2-hr cl. Prereq: 604 or 614 or equiv; and grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**709 Seminar in American Politics U G 5**

Introduction to the central research areas and literature of the field of American politics.

Wi Qtr. 5 cl. Prereq: Grad standing in polit sc or permission of instructor. Not open to students with credit for this topic under 894.

**715 Judicial Politics: Process and Policy Making U G 5**

Examination of the judicial process with emphasis on the work of trial courts and the roles of courts as policy makers.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**716+ Judicial Politics: Decision Making U G 5**

Examination of decision making in appellate courts.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**717 Readings in Legislative Politics and Policy-Making U G 5**

A theoretical-empirical analysis of the functioning and policy product of American legislatures; intensive reviews of selected aspects of the legislative literature to be conducted.

2 2-hr cl. Prereq: 617 or equiv; and grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**725 Basic Theories in the Study of Comparative Politics U G 5**

Examination of such concepts and theories as structural-functional analysis; general systems theory; and sociocultural systems as determinants of governmental structures.

3 cl. Prereq: Grad standing or permission of instructor.

**727+ Problems in Western European Politics U G 5**

Intensive study of selected problems.

1 2-hr cl. Prereq: 627 and grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**731+ Problems in Post-Soviet Politics G 5**

An intensive examination of selected problems such as elite conflict, party formation, institutionalization, nationalism, and interstate relations within the CIS.

1 3-hr cl. Prereq: 630 or 655; and grad standing or permission of instructor.

**734+ Readings on Chinese Politics U G 5**

A seminar for the purpose of reading advanced scholarly materials on contemporary Chinese politics.

1 2-hr cl. Prereq: 537 or 637 or permission of instructor; or grad standing. Repeatable to a maximum of 15 cr hrs.

**740+ Problems in Latin American Politics U G 5**

An advanced seminar devoted to a structured examination of the major theories, concepts, and approaches used in the analysis of Latin American politics.

1 3-hr cl. Prereq: 562 or 640; and grad standing or permission of instructor.

**741 Political Development U G 5**

Theories, approaches, and methodology in the analysis of political life in the new states of Asia and Africa; discussion of selected case and cross-national studies with theoretical relevance.

3 cl. Prereq: 541 or 636; and grad standing or permission of instructor.

**742 Political Issues in Economic Development G 5**

Political factors that have affected the economic development of the western world and the developing areas.

Au Qtr. 1 3-hr cl. Prereq: Grad standing in the social and behavioral sciences or permission of instructor.

**744 Democratic Transitions U G 5**

Theoretical examination of the dynamics of the transition from authoritarian to democratic regimes, with special attention to Southern Europe and South America.

Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor.

**745 Basic Theories in the Study of International Politics U G 5**

Examination of such basic concepts and theories as equilibrium models, balance of power, national interest, geopolitical configurations.

2 3-hr cl. Prereq: Grad standing or permission of instructor.

**746 Synthesizing International Politics Scholarship U G 5**

Synthesis of international politics research and writings, intended for advanced graduate students.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**747 Research Methods in International Politics U G 5**

Examines a number of research techniques and approaches common in international politics such as content analysis, simulation, mathematical modeling, and factor analysis.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**749 Topics in Cross-National Policy Analysis U G 5**

A comparative examination of substantive cross-national policy issues such as welfare, security, economic development, etc.

3 cl. Prereq: Grad standing or permission of instructor.

**750 Policy Management in International Politics U G 5**

Analyzes such subjects as forecasting, social indicators, social engineering, needs assessment and goal-setting from the perspective of the strategic and executive functions of policy making.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**751+ Conflict and Peace U G 5**

Sources and types of social conflict with special attention to international violence; causes of war, their avoidance and control.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**752 Security Policy for the Post-Cold War World U G 5**

Theories of conflict and war causation and an assessment of their durability in a new era of world politics.

Wi Qtr. 2 2-hr cl. Prereq: Any prior course work in international relations and permission of instructor; or grad standing.

**753 Theories of International Political Economy U G 5**

Contemporary literatures in international political economy; their ties to classical schools of thought in international relations and political economy; points of contention between them.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**754 Selected Topics in Soviet and Post-Soviet Foreign Policy G 5**

Intensive readings and discussions on methodological and theoretical research issues in Soviet and post-Soviet foreign policy processes and outcomes.

2 2-hr cl. Prereq: 630 or 655 or equiv, or permission of instructor.

**755† American Foreign Policy Making U G 5**

An examination of various approaches used to explain American foreign policy behavior including the rational actor, policy process, and bureaucratic politics models.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**756 Foreign Policy Design U G 5**

Problems of designing foreign policy including organizational, contextual, economic, and public opinion constraints; how to create an information retrieval system to aid decision-making.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**757 Comparative Foreign Policies U G 5**

Examines comparatively the sources and classes of behavior of territorial actors in the international political system.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**759 International Organization U G 5**

Comprehensive view of international governmental, non-governmental, and business organizations; their roles in solving problems such as poverty, war, pollution; particular attention to the U.N. system.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**760 Transnational Relations U G 5**

Comprehensive view of nongovernmental relations (trade, agriculture, science, religion, health, labor) between people in different nation-states with particular attention to opportunities for increased citizen control.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**762 Theory and Explanation in Political Science U G 5**

A survey of topics in the methodology and philosophy of social science including: logic, conceptualization, explanation, theory; applications to criticism in political science.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**765 Interpretation of Texts in Political Theory U G 5**

Approaches to interpretation of texts of political theory, contemporary as well as classic, grounded in study of selected texts.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**766 Selected Topics in Political Theory U G 5**

Intensive joint readings and discussions concentrating upon one of the major themes, problems, or movements in political theory; topic information available from instructor.

1 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**767 Evaluation in Politics U G 5**

The nature and foundations of political evaluation; methodological problems and substantive theories for the evaluation of institutions, public policy, and approaches to policy analysis.

2 2-hr cl. Prereq: Grad standing or permission of instructor.

**768 Concepts in Contemporary Political Theory U G 5**

Critical examination of political concepts from different theoretical traditions; concepts such as power, freedom, equality, obligation, community, and rationality; topics vary.

2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**774 Readings in Political Participation and Voting Behavior U G 5**

Intensive examination of literature on selected topics in the area of participation and voting behavior in the United States.

2 2-hr cl. Prereq: 674 or equiv, and grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**775† Readings in American Political Parties U G 5**

Intensive study of literature on selected aspects of American political parties.

3 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**776 Comparative Political Institutions U G 5**

Study of state building process, regime types, and contemporary governmental institutions from a broad cross-national perspective.

3 cl. Prereq: Grad standing or permission of instructor.

**777 Comparative Political Behavior U G 5**

A cross-national examination of political behavior, including such topics as socialization, participation, voting, elite behavior, mass-elite linkages.

3 cl. Prereq: Grad standing or permission of instructor.

**778 Comparative Political Parties and Interest Groups U G 5**

Comparative analysis of the nature and role of political parties and interest groups in contemporary societies.

3 cl. Prereq: Grad standing or permission of instructor.

**779 Readings on the Policy Process U G 5**

Consideration of the basic theories, concepts, and techniques used in policy analysis; the determinants of public policy; and the impact and evaluation of public policy.

2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**H783 Honors Research U 3-5**

Prereq: 4th yr standing and 40 cr hrs in social sciences, including 15 cr hrs in polit sc with a record of A in at least half of the polit sc courses and an average of B in the remainder; and permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA *with distinction* in polit sc. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. A special topic is assigned to each student and results are tested by the requirement of papers and special examinations. This course is graded S/U.

**786\* Causal Analysis U G 5**

Analysis of causal models by Simon-Blalock techniques, recursive and nonrecursive path estimation; special topics include measurement error, standardization, and ordinal data.

2 2-hr cl. Prereq: 685, 686, and grad standing or permission of instructor.

**787\* Scaling and Dimensional Analysis in Political Science U G 5**

Topics include measurement and data theory, unfolding, proximity and dominance (Guttman) scaling, multidimensional scaling, and factor analysis.

2 2-hr cl. Prereq: 685, 686, and grad standing or permission of instructor.

**788† Mathematical Theories of Politics U G 5**

Introduction to various major mathematical theories of political phenomena and the role of formal analysis in political science.

2 2-hr cl. Prereq: 790 or equiv, and grad standing or permission of instructor.

**790 Foundations of Political Science U G 5**

Introductory study of diverse efforts to ground knowledge of politics, positivist and post-positivist views of science, sources of formal rigor, and interpretation and evaluation.

2 2-hr cl or equiv. Prereq: Grad standing or permission of instructor.

**793 Individual Studies U G 1-5**

Individual studies in political science; student work is evaluated by papers and/or special examinations.

Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 50 cr hrs, in any combination of decimal subdivisions, with not more than 20 cr hrs in a single subdivision. These courses are graded S/U.

**793.01 American Politics****793.02 Comparative Politics****793.03 International Politics****793.04 Political Theory****793.05 Public Policy****Studies in National Security Policy**

See NSP Std 795.

**General Prerequisites for Courses Numbered 800 and 900**

A general foundation in undergraduate courses in history and the social sciences is assumed. Any of the 800-level courses listed may be repeated provided that no student shall earn more than 10 hours of credit in any single course.

**800 Research Seminar in American Politics G 5**

Each decimal subdivision repeatable to a maximum of 10 cr hrs, including cr hrs earned for these topics under 894.

**800.01 Design of Research in American Politics**

Development of a research design on a selected topic in American politics; consultation on substantive and methodological problems offered by faculty.

Wi Qtr. 1 2-hr cl. arr time. Prereq: 45 cr hrs of graduate work in polit sc or permission of instructor.

**800.02 Research in American Politics**

Execution of a research design on a selected topic in American politics; consultation on substantive and methodological problems offered by faculty.

Sp Qtr. 1 2-hr cl. arr time. Prereq: 800.01 or permission of instructor.

**803† Research in Public Opinion G 5**

Development and execution of a research design focusing on a problem in American public opinion; consultation on substantive and methodological problems offered by instructor.

1 2-hr cl. Prereq: 702 or permission of instructor.

**817† Research in Legislative Politics and Policy-Making G 5**

Development and execution of a research design focusing on a particular problem in American legislative research; consultation on substantive and methodological problems offered by instructor.

1 2-hr cl. Prereq: 717 or equiv.

**826 Research in Comparative Politics G 3-5**

Research seminar on various topics in comparative politics.

1 2-hr cl. Prereq: 2 polit sc courses in foreign governments at 600-level or above, or equiv. Repeatable to a maximum of 15 cr hrs.

**846 Research in International Politics G 3-5**

Research seminar in international politics.

1 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**866 Research in Political Theory G 5**

Research seminar in political theory; intensive treatment of selected topics.

1 2-hr cl. Repeatable to a maximum of 10 cr hrs.

**867 Research in Mathematical Political Science G 5**

Design and examination of research focusing on a problem in mathematical political science.

2 2-hr cl. Repeatable to a maximum of 10 cr hrs.

**874 Research in Mass Political Behavior G 5**

Development and execution of a research design focusing on a problem in electoral or public opinion research; consultation with instructor on substantive and methodological issues.

1 2-hr cl. Prereq: 703 or 774 or equiv. Repeatable to a maximum of 10 cr hrs.

**875† Research on American Political Parties G 5**

Development and execution of a research design focusing on a problem relating to American political parties; consultation on substantive and methodological problems offered by instructor.

1 2-hr cl.

**879 Research on Public Policy G 5**

Research into the process of policy making and the substance of public policy; consultation on substantive and methodological problems offered by instructor.

1 2-hr cl. Repeatable to a maximum of 15 cr hrs.

**889 Internship in Politics and Public Policy G 1-15**

Combines experience in political institutions or policy processes with analysis of that experience in light of relevant scholarly literature.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**892 Workshop G 1-15**

Intensive study of an area or problem in political science.

Arr. Prereqs vary with topic offered. Repeatable to a maximum of 10 cr hrs.

**894† Group Studies: Contemporary Political Problems G 5**

Group studies to examine specific contemporary political problems.

5 cl. Repeatable to a maximum of 30 cr hrs.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

Repeatable by permission.

**999 Research in Political Science G Arr**

Research for thesis or dissertation purposes only.

This course is graded S/U.

## Portuguese

266 Cunz Hall, 1841 Millikin Road, 292-4958

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 and then move on to advanced courses. Students with knowledge of Spanish, however, may choose the condensed introductory sequence 501-502 instead. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.

Information concerning course frequency and quarter(s) of offering, if not specified, may be obtained by contacting the department.

**101 Elementary Portuguese U 5**

Elements of Portuguese grammar, with oral and written exercises; attention to ear training and oral practice; and customs.

Au, Sp Qtrs. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

**102 Elementary Portuguese U 5**

The elements of Portuguese grammar with abundant oral and written exercises; development of conversational skill; reading, vocabulary building.

Au, Wi, Qtrs. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

**103 Intermediate Portuguese U 5**

Continuation of Portuguese grammar; reading of short stories, plays, and novels; increased attention to development of oral proficiency.

Wi, Sp Qtrs. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course.

**104 Intermediate Portuguese U 5**

Reading of Portuguese plays, short stories, and novels; emphasis on oral practice; non-fiction of cultural and historical significance.

Au, Sp Qtrs. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course.

**202 Portuguese Conversation and Composition U 5**

Intensive practice in conversation and composition based on materials concerning current life in Brazil and Portugal, with thorough review of grammar.

Wi Qtr. 5 cl. Prereq: 104 or 502 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

**401 Review Grammar and Composition U 5**

Review of Portuguese grammar; compositions based on readings.

Sp Qtr. 3 80-min cl. Prereq: 104.

**501 Portuguese for Spanish Speakers I U G 5**

Rapid introduction to Portuguese language intended for students with at least intermediate-level Spanish skills.

Su(1st term), Au Qtrs. 5 cl. Prereq: Spanish 201 or equiv. Not open to students with credit for 101, 102, 103, or 104.

**502 Portuguese for Spanish Speakers II U G 5**

Continuation of 501; Portuguese language for students with at least intermediate-level Spanish skills.

Su(2nd term), Wi Qtr. 5 cl. Prereq: 501. Not open to students with credit for 101, 102, 103, or 104.

**560† Portuguese Culture and Civilization U G 5**

The culture of Portugal and Portuguese Africa from their founding to the present through the study of selected Portuguese-language literature, news, and film.

2 2-hr cl. Prereq: 202 or equiv.

**561† Brazilian Culture and Civilization U G 5**

Study of the development of Brazilian culture through its Portuguese language, literature, folklore, music, art, and film; special emphasis on contemporary issues.

Wi Qtr. 2 2-hr cl. Prereq: 401 or permission of instructor.

**611† The Portuguese Language U G 5**

Phonetic transcription from tapes of major continental and Brazilian dialects; the phonological pattern of modern Portuguese; general characteristics of its historical evolution from Hispano-Romance.

4 cl, 1 lab hr. Prereq: 102 and jr standing, or permission of instructor.

**620 Main Currents in the Development of Portuguese Literature U G 5**

Portuguese literature from the Middle Ages to the present with emphasis on the evolution of major movements.

Au Qtr. 5 cl. Prereq: 421, and 422 or 423, or permission of instructor.

**621 Main Currents in the Development of Brazilian Literature U G 5**

Brazilian literature, including the Portuguese colonial literature, from the 16th century to the present.

Wi Qtr. 5 cl. Prereq: 421, and 422 or 423, or permission of instructor.

**623\* Modern Brazilian Novel U G 5**

The Brazilian novel from the 1930's to the 1960's.

Sp Qtr. 5 cl. Prereq: 421, and 422 or 423, or permission of instructor.

**693 Individual Studies U G 1-15**

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**893 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-15**

Investigation of minor problems in the various fields of Portuguese literature and language.

Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

## Poultry Science

108 Dakan Hall, 674 West Lane Avenue, 292-4821

Four courses, **202, 310, 420, and 430** are required for the Animal, Dairy, and Poultry Science major and are offered cooperatively by the Departments of Animal Science, Dairy Science, and Poultry Science.

**202 Introductory Animal Sciences U 5**

Role, current organization, history, and characteristics of the animal industries in the world. Clay and Turner.

Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Not open to students with credit for Animl Sc 100 or 200 or 202, or Dairy Sc 202. Cross-listed in Animal Science and Dairy Science.

**300 Fundamentals of Poultry Science U 5**

Application of science and technology in the poultry and related industries. Latshaw and Stephens.

Wi, Sp Qtrs. 4 cl, 1 1-hr lab, 1hr arr. Prereq: Biology 113 or Animl/Dairy/Poultry Sc 202. Not open to students with credit for 200. This course is available for EM credit.

**301 Introduction to Aviculture U 3**

Provides a basic understanding about the selection, care, and feeding of pet birds in captivity. Latshaw.

Sp Qtr. 3 cl. Prereq: Biology 101 or 113.

**310 Principles of Animal Systems Physiology U 5**

Introductory physiology course that surveys organs/systems within the body and relates the functional physiology of those systems to animal production. Pope.

Wi Qtr. 5 1-hr cl. Prereq: Biology 110 or 113; 202, Animl Sc 202 or Dairy Sc 202. Not open to students with credit for Animl Sc 310 or Dairy Sc 310. Cross-listed in Animal Science and Dairy Science.

**389 Poultry Science Experience U 2-5**

Practical experience, including completion of outlined program and written report, in an approved poultry establishment. Stephens.

Su, Au, Wi, Sp Qtrs. Prereq: 200 or 300 and permission of instructor. Open only to dept majors. Repeatable to a maximum of 10 cr hrs.

**420 Principles of Genetic Improvement U 5**

An introduction to the methods available for bringing about genetic change in farm animals. Davis and Irvin.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 202, or Animl Sc 100 or 200 or 202, or Dairy Sc 202; and Animl Sc 210 or Agr Econ 205 or Agr Educ 387 or Agronomy 210 or Stat 145; and Biology 113. Not open to students with credit for Animl Sc 420 or Dairy Science 420. Cross-listed in Animal Science and Dairy Science.

**430 Principles of Animal Nutrition U 5**

A study of the fundamental principles of nutrition in mammals and birds. Firkins and Latshaw.

Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: Animl Sc 100 or 200 or Animl/Dairy/Poultry Sc 202, or Nat Res 200 and Biology 113. Not open to students with credit for Animl Sc 430 or Dairy Sc 430. Cross-listed in Animal Science and Dairy Science.

**431 Feeds and Feeding U 5**

Evaluation of feedstuffs used and dietary formulations for swine, poultry, sheep, beef, and dairy; practical feeding programs for each species will be presented. Loerch and Mahon.

Sp Qtr. 4 1-hr cl, 1 1-hr recitation, 1-day field trip. Prereq: 430 or Animl Sc 430 or Dairy Sc 430. Not open to students with credit in Animl Sc 635 or 735 or Dairy Sc 635 or 735 or Poultry Sc 635 or 735. Cross-listed in Animal Science and Dairy Science.

**494 Group Studies U 2, 3, or 5**

Intensive study of selected areas of poultry science appropriate to the group and not provided in other courses.

Su, Au, Wi, Sp Qtrs. Cl hrs arr. Prereq: 200 or 300. Repeatable to a maximum of 10 cr hrs.

**530 Comparative Animal Nutrition U 5**

Advanced principles of animal nutrition. Firkins and Latshaw.

Wi Qtr. 5 cl. Prereq: 430 or Animl Sc 430 or Dairy Sc 430, second writing course, and jr or sr standing. Not open to students with credit for Animl Sc 530 or Dairy Sc 530. Cross-listed in Animal Science and Dairy Science. GEC course.

**541 Commercial Poultry Management U G 5**

A study of commercial poultry management utilizing an enterprise approach. Muir.

Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 200 or 300 and Animl, Dairy, or Poultry Sc 310, 420 and 430; or Avian Biology minor; and sr standing.

**593 Individual Studies U 2, 3, or 5**

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 CPHR and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**614 Poultry Physiology U G 5**

An organ system approach to avian physiology with particular emphasis on adaptation to modern production systems, animal care, growth, and reproduction. Bacon.

Sp Qtr. 4 cl, 1 3-hr lab. Prereq: Biology 110 or 113 and Vet Phys 410 or 411 or Zoology 432 or Physiol 601.

**640 Prevention and Control of Avian Diseases U G 5**

The etiology, recognition, prevention, and control of the important diseases of poultry and game birds.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: Chem 102 or 122 and Microbiol 509 or 520.

**650 Egg and Poultry Products Technology U G 5**

Physical, chemical, and microbiological properties of eggs and poultry, and relationship of these properties to processing methods, product quality, and utilization. Stephens.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: Chem 102 or 122, Microbiol 509 or 520, and second writing course. GEC course.

**H683 Honors Projects U 1-10**

Conducting and reporting the honors project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, 693, or H693. This course is graded S/U.

**694 Group Studies U G 3-5**

Advanced studies of selected areas of poultry science appropriate to the group and not provided in other courses.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**695 Seminar U G 1**

Au, Wi, Sp Qtrs.

**Advanced Reproductive Physiology**

See Dairy Science 710. Offered in cooperation with Animal Science and Dairy Science.



**721 Genetics of Animal Populations I U G 3**

Parameters of static populations, genetic arrays, and equilibria and statistical measures; partitioning the phenotypic variance mutation, migration, selection and chance. Irvin.

Wi Qtr. 3 cl. Prereq: 420 or Genetics 500 and 650 or equiv. Not open to students with credit for Animal or Dairy Sc 721. Cross-listed in Animal Science and Dairy Science.

**722 Genetics of Animal Populations II U G 3**

Selection of polygenic characters, mating systems, and development of breeding plans. Irvin.

Sp Qtr. 3 cl. Prereq: 721 or Animl Sc 721 or Dairy Sc 721 or equiv. Not open to students with credit for Animal or Dairy Sc 722. Cross-listed in Animal Science and Dairy Science.

**733 Nutrition in the Support of Growth U G 5**

A functional approach to the study of nutrition for support of growth and maintenance in animals and humans. Lilburn.

Wi Qtr. 5 cl. Prereq: Animl/Dairy/Pltry Sc 310, Biochem 511, and Animl/Dairy/Pltry Sc 430 or Humn Ntr 610, or permission of instructor. Not open to students with credit for Animl Sc 733 or Dairy Sc 733 or Fd Sc&Te 733. Cross-listed in Animal Science, Dairy Science and Food Science and Tech.

**734 Nutrition in the Support of Reproduction U G 3**

A functional approach to the study of nutrition for support of reproduction in animals and humans. Day and Latshaw.

Sp Qtr. 3 cl. Prereq: Animl/Dairy Sc 412 or 612, Animl/Dairy/Pltry Sc 430, and Biochem 511. Not open to students with credit for Animl Sc 734 or Dairy Sc 734. Cross-listed in Animal Science, Dairy Science, and Food Science and Nutrition.

**800 Seminar G 1**

Discussion of poultry science research and research methods. Muir.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in pltry sc. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**810 Advances in Physiology of Domestic Animals G 3**

Au, Wi, Sp Qtrs. 4-hr cl. Prereq: Acceptable courses in physioli, anatomy, biochem, and written permission of instructor. Not open to students with credit for Animl Sc 810 or Dairy Sc 810. Cross-listed in Animal Science and Dairy Science.

**810.01\* Anterior Pituitary Function**

Bacon.

Au Qtr.

**810.02\* Endocrinology of Reproduction**

Pate.

Wi Qtr.

**810.03 Immunology and Immunogenetics**

Hines.

Sp Qtr.

**810.05†\* Mammalian Germ Cells**

Pope.

Wi Qtr.

**820 Current Topics in Animal Genetics**

Prereq: Acceptable courses in animal genetics, math, and statistics. Repeatable to a maximum of 12 cr hrs. Not open to students with credit for Animl Sc 820 or Dairy Sc 820.

Cross-listed in Animal Science and Dairy Science.

**820.01†\* Selection Index Theory G 1-3**

Allaire.

Au Qtr.

**820.02†\* Research Methods in Animal Genetics G 1-3**

Davis.

Wi Qtr.

**820.04†\* Modeling of Breeding Systems G 1-3**

Allaire and Davis.

Sp Qtr.

**820.07 Seminar in Animal Genetics Research G 1**

Review of literature related to genetics improvement of agricultural animal populations. Allaire.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Acceptable courses in animal genetics, math, and statistics. Not open to students with credit for Animl Sc 820 or Dairy Sc 820. Repeatable to a maximum of 12 cr hrs. This course is graded S/U. Cross-listed with Animal Science and Dairy Science.

**830 Advanced Studies in Nutrition G 3**

Au, Wi, Sp Qtrs. 3 or 4 cl. Prereq: 630 or Animl Sc 630 or Dairy Sc 631 or Hum Nutr 610; Fd Sc&Nu 761 and 762; and 10 grad cr hrs in physioli. Not open to students with credit for Animl Sc 830 or Dairy Sc 830 or Humn Ntr 830. Cross-listed in Animal Science, Dairy Science, Food Science and Nutrition, and Human Nutrition and Food Management.

**830.01†\* Energy**

Latshaw, Palmquist, and Snook.

Sp Qtr.

**830.02\* Minerals**

Mahan.

Au Qtr.

**830.03†\* Proteins and Amino Acids**

Johnson.

Wi Qtr.

**830.04\* Vitamins**

Lilburn.

Wi Qtr.

**830.05\* Lipids**

Allred.

Au Qtr.

**830.08†\* Carbohydrates**

Roehrig.

Au Qtr.

**840 Advanced Study in Molecular Endocrinology G 5**

Combined lecture/laboratory course on the molecular and cellular basis of hormone action and state-of-the-art methodologies in molecular endocrinology.

Su Qtr. Prereq: Biochem 511 or equiv and permission of instructor. Cross-listed in Animal Science and Dairy Science.

**850 Molecular Biology Techniques G 4**

Combined lecture/laboratory in the techniques of nucleic acid isolation, analysis, hybridization, sequencing, cloning, expression, and associated biotechnologies.

Su Qtr. 102-hr cl, 104-hr lab. Prereq: Biochem 521 or 613 or equiv. Not open to students with credit for Animl Sc 850 or Dairy Sc 850. Cross-listed in Animal Science and Dairy Science.

**898 Interdepartmental Seminar in Nutrition G 1**

See Interdepartmental Seminars.

Sp Qtr. Given cooperatively by Animal Science, Dairy Science, Food Science and Nutrition, and Poultry Science. This course is graded S/U.

**993 Individual Studies G 2, 3, or 5**

Su, Au, Wi, Sp Qtrs. Prereq: 15 cr hrs of 300-level courses or higher in pltry sc, animl sc, or dairy sc and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Preventive Medicine

B-201 Starling-Loving Hall, 320 West 10th Avenue, 293-3907

**685 Field Experience in Comprehensive Health Planning P 6, 12, or 18 G 6-12**

Full-time assignment to a state or local health planning agency, to work on a specific project in community health under the guidance of a selected faculty adviser.

Su, Au, Wi, Sp Qtrs. Field time assigned for medical students 1, 2, or 3 months and grad students 1/2 or entire summer quarter. Prereq: Permission of instructor.

**701 Design and Analysis of Comparative Biomedical Research I G 4**

Theory and application of basic statistical concepts as they affect design of biomedical research, integrated with application of computer statistical packages. Moeschberger.

Au Qtr. 2 1½-hr cl and 2 1-hr labs. Prereq: Grad standing in prev med or permission of instructor. Not open to students with cr for 764 or Vet Prev 764 or Vet Phys 764. Cross-listed in Veterinary Preventive Medicine and Veterinary Physiology and Pharmacology.

**702 Biostatistics and Computers in Medical Research G 4**

Review of the fundamental concepts of biostatistics, including more complex analysis of variance designs, integrated with application of computer statistical packages. Moeschberger.

Wi Qtr. 2 1½-hr cl and 2 1-hr labs. Prereq: 701, grad standing in prev med or permission of instructor. Not open to students with credit for 765 or Vet Prev 765. Cross-listed in Veterinary Preventive Medicine.

**703 A Problem-Oriented Approach to Biostatistics G 4**

The employment of actual health-related problems to illustrate the use of computers and applied statistical methods important to epidemiologists and other health professionals. Lanese and Moeschberger.

Sp Qtr. 2 2-hr cl. Prereq: 701, and 702 or permission of instructor. Not open to students with credit for 766.

**705 Health Survey Methods G 4**

An introduction to health survey methods; lectures, readings, classroom, and community exercises; consideration of health planning and epidemiological applications. Lanese.

Wi Qtr. 2 2-hr cl and 1 1-hr conf. Prereq: Grad standing in prev med or permission of instructor. Not open to students with credit for 770.

**711 Epidemiology I G 4**

Principles of epidemiology with special emphasis on methods employed in current epidemiologic studies. Wilkins.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in prev med or permission of instructor. Not open to students with credit for 800.

**712 Epidemiology II G 4**

Design of epidemiologic studies of major health problems; review of key studies; application of epidemiologic data to public health programs and medical care delivery. Harris.

Wi Qtr. 2 2-hr cl. Prereq: 711, grad standing in prev med or permission of instructor. Not open to students with credit for 801.

**713 Epidemiology in Environmental Health G 4**

Principles and application of epidemiologic methods in the investigation and control of health problems stemming from environmental hazards. Wilkins.

Sp Qtr. 2 2-hr cl. Prereq: 711 and 712, or grad standing in prev med or permission of instructor. Not open to students with credit for 802.

**715 Current Health Problems G 4**

Descriptive epidemiology and clinical features of major causes of morbidity and mortality; appraisal of current control mechanisms and policy issues. Gaeuman.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in prev med or permission of instructor. Not open to students with credit for 700.

**721 Economics of Health Care I G 4**

Microeconomic principles of consumer demand with applications to health care use; role of uncertainty and health insurance. Nestel.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: Grad standing in prev med or permission of instructor. Not open to students with credit for 854.

**722 Economics of Health Care II G 4**

Microeconomic principles of supply with applications to the provision of health care services; market place for nurses and physicians; assessment of the competitive model. Nestel.

Au Qtr. 2 2-hr cl. Prereq: 721, or grad standing in prev med or permission of instructor. Not open to students with credit for 852.

**731 Principles of Environmental Health G 4**

Survey of major environmental factors affecting human health, including air, water, and land pollution, occupational hazards, trace metals, chemical carcinogens, radiation, and noise. Wilkins.

Au, Wi Qtrs. 2 2-hr cl. Prereq: Grad standing in prev med or permission of instructor. Not open to students with credit for 731.

**741 Public Health Organization G 4**

History and development of public health agencies; structure and functions of governmental, voluntary, and proprietary health organizations. Banks/Chen.

Au qtr. 2 2-hr cl. Prereq: Grad standing in prev med or permission of instructor. Not open to students with credit for 812. Field report required.

**750 Principles of Epidemiology P G 3**

Introduction to the nature and scope of epidemiology; survey of basic epidemiological methods and their application to selected acute and chronic health problems.

Au Qtr. 2 1½-hr cl. Prereq: Grad or professional standing. Not open to students with credit for 800 or 851.

**751 Principles and Applications of Epidemiology and Associated Statistical Methods I P G 3**

Population medicine: distribution and determinants of health and disease, screening for detection of disease, observation and analytic studies, and control of infectious disease. Keller.

Au Qtr. Prereq: Enrollment in MPH program or permission of instructor.

**752 Principles and Applications of Epidemiology and Associated Statistical Methods II P G 3**

Statistical methods in epidemiologic studies, mortality and morbidity, investigations of outbreaks of disease, design in public health, and clinical and community trials. Lanese.

Wi Qtr. 10 hrs on 3 3-day wkends. Prereq: Enrollment in MPH program or permission of instructor.

**753 Principles and Applications of Epidemiology and Associated Statistical Methods III P G 3**

Continuation of statistical methods relevant to epidemiology and public health, non-parametric methods, multivariate methods, and critical analyses of selected papers. Schwartzbaum.

Sp Qtr. 10 hrs on 3 3-day wkends. Prereq: Enrollment in MPH program or permission of instructor.

**754 History of Public Health P G 3**

Development of public health services in the United States; social, economic, and cultural influences; historical background of current responses to perceived health needs.

Su Qtr. Prereq: Enrollment in MPH program or permission of instructor.

**761 Behavioral Epidemiology G 4**

A review of the epidemiological literature that examines the relationship between behavioral factors, theories of stress, and disease processes. Lanese and Banks.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in prev med or permission of instructor. Not open to students with credit for 853.

**786 Biometrics Laboratory P G 3**

Participation in consultations offered to biomedical researchers, combined with individualized faculty guidance. Moeschberger.

Au, Wi, Sp Qtrs. 2 1-hr lab and 2 1-hr conf. Prereq: Grad standing in prev med or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**793 Individual Studies in Preventive Medicine**

P 6, 12, or 18 G 2-5

1, 2, 3, or 4 months; offered all months except June. Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in prev med or permission of instructor. Repeatable to a maximum of 24 cr hrs for professional credit and 15 cr hrs for grad credit. These courses are graded S/U.

**793.02 Biometrics**

Lanese and Moeschberger.

**793.04 Environmental Health**

Wilkins.

**793.05 Epidemiology**

Keller and Wilkins.

**793.08 Community Health**

Keller and Banks.

**793.09 Comprehensive Health Planning****793.10 Health Agency Administration**

Banks.

**793.11 Behavioral Sciences Studies in Health**

Lanese and Banks.

**794 Group Studies in Preventive Medicine**

P 6, 12, or 18 G 2-5

1, 2, 3, or 4 months; offered all months except June (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs for professional credit and 15 cr hrs for grad credit.

**794.01 Biometrics**

Lanese and Moeschberger.

**794.02 Environmental Health**

Wilkins.

**794.03 Epidemiology**

Keller and Wilkins.

**794.04 Community Health**

Banks and Keller.

**794.99 General****803 Health Data: Sources and Uses P G 3**

Study of compilation of health and health-related data and their utilization; local, state, regional, and national surveys; and life tables and community health indices. Lanese.

Sp Qtr. Prereq: Enrollment in MPH program or permission of instructor.

**813 Planning for Public Health Promotion and Disease Prevention P G 3**

Historical, philosophical, scientific, and empirical bases for planning and implementing public health promotion and disease prevention program with illustrations involving community residents, employees, and minorities. Chen.

Sp Qtr. 20 hrs on each of five consecutive 3-day wkends. Prereq: Admission to the MPH program or two yrs of experience in the health field.

**814 Programs of Health Promotion and Disease Prevention P G 3**

Theory and practice of preventive programs in personal health and environmental health, national strategies of disease prevention, and prospects for the improvement of health in the United States. Heaney.

Au Qtr. Prereq: Enrollment in MPH program or permission of instructor.

**849 Pro-Seminar in Community Health Development G 2-3**

Each week a basic area of community health development is presented by a specialist; the students prepare by reading assigned literature in this area, respond to questions raised during each session, and prepare reviews of the key issues.

Au, Wi, Sp Qtrs. 1 2-hr session per wk, and additional conferences. Prereq: Grad standing in prev med or permission of instructor. Repeatable to a maximum of 12 cr hrs.

**850 Seminar in Preventive Medicine G 1-3**

Au, Wi, Sp Qtrs. Prereq: Grad standing in prev med or permission of instructor. Repeatable to a maximum of 8 cr hrs.

**857 Health Planning Laboratory G 3**

Practicum in the application of planning techniques to current health problems and policy issues. Nestel.

Wi Qtr. 2 1½-hr conf. Prereq: Grad standing in prev med or permission of instructor. Repeatable to a maximum of 9 cr hrs.

**885 Behavioral Responses in Disease Prevention G 3**

A survey of behavioral science literature concerning health behavior, illness behavior, and sick-role and their impact upon programs for prevention, early detection, and amelioration of disease. Banks.

Sp Qtr. 2 1½-hr cl. Prereq: Grad standing in prev med or permission of instructor.

**890 Clinical Approaches to Prevention P G 3**

Study of application and evaluation of the methods of community health to practice of clinical medicine and other interventions at the level of the individual. Keller.

Au, Wi, Sp Qtrs. 1 2½-hr cl. Prereq: Grad standing in prev med or permission of instructor.

**999 Research in Preventive Medicine G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in prev med or permission of instructor. This course is graded S/U.

## Psychiatry

140 Neuropsychiatric Hospital, 1670 Upham Drive, 293-8282

**793 Individual Studies in Psychiatry P 6, 12, 18 G 1-18**

A supervised, scholarly investigation of some aspects of psychiatry in which there is interest by the student and expertise by the faculty.

1, 2, or 3 months. Offered all months (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: Adequate clinical training in psychiatry and permission of chairperson and instructor. Repeatable to maximum of 18 cr hrs. This course is graded S/U.

**850 Seminars in Psychiatry G 1-6**

A— Clinical Psychiatry

B— Group Therapy

C— Psychotherapy

D— Psychiatric Literature

E— Child Psychiatry

Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of chairperson and instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**999 Psychiatry Research G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: MD and residency in psychiatry. This course is graded S/U.

## Psychology

142 Townshend Hall, 1885 Neil Avenue, 292-6741

**100 General Psychology U 5**

Introductory psychology, a prerequisite to advanced courses; the application of the scientific method to behavior; topics include learning, motivation, perception, personality, physiological basis of behavior.

Su, Au, Wi, Sp Qtrs. 5 cl. H100 (honors) may be available to students enrolled in an honors program or by permission of dept. This course is available for EM credit. BER/GEC/LAR course. SS Admis Cond course.

**101 Advanced General Psychology U 5**

Continuation of 100 with further emphasis on the development of a scientific attitude toward personal psychological problems in the fields of learning, thinking, intelligence, and personality.

Au, Wi, Sp Qtrs. 5 cl. H101 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 100. BER/LAC/LAR course. SS Admis Cond course.

**120 The Psychology of Academic and Personal Effectiveness U 3**

A survey of theories and practices designed to improve higher level skills in reading, perception, learning, and adjustments.

Au, Wi, Sp Qtrs. 2 cl, 1 2-hr lab.

**130 Advising College Students U 1-4**

Selected students will study the dynamics of and learn skills related to the career, scholastic, social, and personal development of college students.

Au Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs.

**210† Educational Psychology for Medical Personnel U 5**

Consideration of human capacities, abilities, interests, individual differences, and overall development; aspects of learning, personality, and physiological correlates of psychological phenomena of interest to medical personnel.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 100. Not open to students with credit for 230. BER course. SS Admis Cond course.

**221 Quantitative and Statistical Methods in Psychology II U 4**

A concentrated examination of applications of statistical tools in inference in contemporary psychology; hypothesis testing, regression, correlation, and analysis of variance.

Au, Wi, Sp Qtrs. 2 cl, 1 2-hr lab. Prereq: 100 and 220, or Stat 125 or 145 or 245. Not open to students with less than a grade of C- in 220; or Stat 145 or 245.

**230† Introduction to Educational Psychology U 5**

Facts and principles of human development and learning are applied to the problems of education; emphasis on scientific evidence in the solution of educational problems.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 100. Not open to freshmen or to students with credit for 210. SS Admis Cond course.

**310 Basic Psychology: Perception U 3**

Theory, methods, and physiological correlates of sensory and perceptual processes; emphasis on the relation of behavior to stimulus variation.

Au Qtr. 3 cl. Prereq: 100 and 220, or Stat 145 or 245.

**311 General Psychology: Motivation and Action U 3**

A behavioristic presentation of experimental work on learning and motivation. Wi Qtr. 3 cl. Prereq: 100; prereq or concur: 220, or Stat 145 or 245.

**312 General Psychology: Learning and Thinking U 4**

An introduction to experimental study of human memory, learning, and cognition.

Sp Qtr. 3 cl. Prereq: 100 and 220, or Stat 145 or 245.

**313 Introduction to Psychobiology U 3**

Introduction to the neuronal and behavioral foundations of psychobiology.

Au Qtr. 3 cl. Prereq: 100.

**330† Psychology of Abnormal Behavior U 3**

Prereq: 100.

**330.01 Major Psychological Disorders**

A consideration of the symptomatology, etiologies, and therapies of the major neuroses and psychoses.

Su, Au, Wi, Sp Qtrs. 3 cl. Not open to students with credit for 330.

**330.02 Historical and Philosophical Issues**

A sociological and historical examination of the concept of mental disorder.

Wi Qtr. 2 1½-hr cl.

**331 Psychopathology and Psychotherapy I U 3**

Examination of current problems, issues, theories, and approaches to psychological deviance.

Au, Wi Qtrs. Prereq: 100. Not open to students with credit for 330.01.

**332 Psychopathology and Psychotherapy II U 3**

Continuation of 331; focus on psycho-therapeutic approaches.

Sp Qtr. Prereq: 331.

**333† Human Behavior Problems U 3**

Analyses of behavior patterns often considered undesirable or otherwise problematic; emphasis on behavioral definitions and analyses of problems, and on behavioral interventions.

Au Qtr. 2 1½-hr cl. Prereq: 100.

**333.01 General Survey****335 Psychology of Adjustment U 3**

Examination of psychological concepts and theories related to individual adjustment and adaptation.

Au, Sp Qtrs. 2 1½-hr cl. Prereq: 100. BER course.

**340† Introduction to Life Span Developmental Psychology U 3**

A survey of developmental psychology including some phylogenetic perspective.

Au Qtr. 3 cl. Prereq: 100.

**350† Contemporary Issues in Developmental Psychology U 3**

A survey course acquainting students with issues resulting from the social changes of the past decade and from an increased interest in the life span. Au, Sp Qtrs. 3 cl. Prereq: 100.

**367 Second Writing Course U 5**

Au, Wi, Sp Qtrs. 2 2-hr cl or 4 cl. Prereq: 100, English 110 or 111 or equiv, and soph standing. GEC/LAR courses.

**367.01 Social Psychology**

Survey of group processes as they affect individual behavior; topics include individual motivation, group behavior, attitudes, and perception of self and others.

H367.01 (honors) may be available to students in the honors program or by permission of the dept. Not open to students with credit for 320.

**367.02 Applications of Psychology**

Introduction to fields of applied psychology, use of psychological methods and principles in understanding and solving problems in a variety of organizational settings.

Not open to students with credit for 321.

**375 Stereotyping and Prejudice U 3**

Lectures address experimental research in stereotyping and prejudice; readings focus on historical, cultural, and sociological perspectives on issues related to gender, ethnicity, and social class.

Au Qtr. 3 cl. Prereq: 100. GEC course.

**394† Group Studies U 1-5**

Undergraduate seminar; topics vary and will be announced.

Su, Au, Wi, Sp Qtrs. Prereq: 100. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in 294.

**500 Experimental Psychology U 5**

An overview of experimental methodological techniques with experiments selected for cultural value; as preparation for technical study; and to represent paradigms used in human and animal research.

Au, Wi Qtrs. 2 cl, 3 lab hrs. Prereq: 220, or Stat 145 or 245, and 6 cr hrs above 300, including at least one of 310, 311, or 312; and English 110 or 111; or equivs with written permission of instructor. Open only to psych majors. GEC/LAR course.

**501 Physiological Psychology U G 3**

An introduction to the biological bases of behavior, basic neuroscience, sensory and motor systems, homeostatic behaviors such as ingestion and reproduction, and the neural bases of learning and memory.

Wi Qtr. 2 1½-hr cl. Prereq: 100 and introductory biology and/or chem recommended.

**502 Advanced Physiological Psychology U G 3**

Current topics in physiological psychology; behavioral and neural effects of brain damage, recovery of function after brain damage, development of the nervous system, and biological models of human psychopathology.

Sp Qtr. 2 1½-hr cl. Prereq: 501 or permission of instructor.

**503 Experimental Approaches to Cognition U G 4**

Cognitive processes are studied from an experimental viewpoint; topics may include attention, pattern recognition, speech perception, memorial processes, and others.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 220, or Stat 145 or 245, and 310 or 312.

**505 Contemporary Viewpoints in Psychology U G 3**

A consideration of the development of modern scientific psychology from its roots in the school of the 19th century to its contemporary status.

Sp Qtr. 3 cl. Prereq: 100 and an additional 11 cr hrs in psych.

**508 Psychology of Judgment and Decision-Making U 5**

An overview of current models and empirical research on cognitive processes in human decision-making and judgment under risk or uncertainty.

Au Qtr. 2 1½-hr cl, 1 2-hr lab. Prereq: 220 or Stat 145 or 245 or equiv; and psych major; or permission of instructor.

**510 Research Methods in Cognitive Psychology U 5**

Issues in experimental design; laboratory experiments include topics such as memory, perception, and attention.

Wi, Sp Qtrs. 2 cl, 1 3-hr lab. Prereq: 220, or Stat 145 or 245, 310 or 312, and jr or sr standing; 221 recommended. Open only to psych majors. Not open to students with credit for 500. GEC/LAR course.

**511 Psychological Testing U G 3**

An overview of theoretical and practical aspects of the assessment and prediction of human behavior; topics include achievement, intelligence, personality, attitudes, interests, and interpersonal relations.

Au, Wi Qtrs. 3 cl. Prereq: 100 and an additional 5 cr hrs in psych.

**513 Introduction to Cognitive Neuroscience U 3**

Examination of the neuroscientific approach to the study of cognition; primary focus on the psychobiology of memory, attention, language, and spatial orientation.

Au Qtr. 2 1½-hr cl. Prereq: 313 or 501 or permission of instructor.

**520 Experimental Social Psychology U 5**

Training in experimental and qualitative methods in social psychology.

Au, Wi, Sp Qtrs. 2 cl, 4 lab hrs. Prereq: 221, 320, or 367.01, and permission of instructor. Open only to psych majors. GEC/LAR course.

**521 Personnel Psychology U G 4**

Overview of theory, method, and practices of personnel psychology: job analysis, recruiting, personnel section, performance appraisal, and training.

Au, Wi Qtrs. 2 1½-hr cl. H521 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: 220 or Stat 145 or 245.

**522 Organizational Psychology U G 4**

Overview of theory, method, and practice of organizational psychology: motivation, job attitudes, leadership, groups, organizational design.

Au, Sp Qtrs. 2 1½-hr cl. H522 (honors) may be available to students enrolled in an honors program or by permission of dept honors committee. Prereq: 100 and 220, or Stat 145 or 245.

**530 Psychology of Personality U G 3**

Major theoretical and research orientations in the study of personality; consideration of psychological processes involved in the attribution of personality characteristics.

Wi, Sp Qtrs. 3 cl. Prereq: 100 and an additional 5 cr hrs in psych.

**531 Clinical Psychology and Alternative Aspects U 3**

Prereq: 100 and an additional 10 cr hrs in psych.

**531.03 Medical Aspects**

Introduction to medical psychology; psychobiological approach to cause and treatment of various mental disorders (schizophrenia, affective illness, psycho-physiologic disorders); treatment approaches include relaxation, hypnosis, biofeedback.

Sp Qtr. 2 1½-hr cl.

**539† Stress, Social Support, and the Professional Helper U G 3**

Stress at work and elsewhere; emphasis on treatment through social support.

Wi Qtr. 3 cl. Prereq: 100 and an additional 5 cr hrs of course work in psych. Not open to students with credit for 640. Designed for health professionals, personnel workers, teachers, and related specialists in human services.

**540 Counseling Psychology: An Introduction U G 3**

For students interested in counseling and personnel work; discussion of counseling psychology, counseling, and testing.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 100 and an additional 5 cr hrs in psych.

**541 Educational and Vocational Appraisal U G 4**

Theory and techniques of assessment of individual characteristics; assessment techniques used in counseling situations.

Su, Au Qtrs. 3 cl. Prereq: 100 and an additional 5 cr hrs of course work in psych.

**542 Vocational Psychology U G 3**

Survey of the psychological aspects of work and their implication for vocational development; the use of labor force and occupational information in vocational choice.

Au Qtr. 3 cl. Prereq: 100 and an additional 5 cr hrs of course work in psych.

**543\* Psychology of Women U G 4**

Exploration of the nature and causes of sex differences in behavior patterns and factors influencing development of women through psychological theory and research.

4 cl. Prereq: 100 and an additional 7 cr hrs in psych. Not open to psych grad students.

**550 Psychology of Childhood U G 3**

Presentation of psychological aspects of growth and development in early and middle childhood.

Su, Au, Wi, Sp Qtrs. 3 cl. H550 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 100.

**551 Adolescence U G 3**

A study of the outstanding characteristics of the adolescent, the educational and social problems arising at this period, and means for dealing with these problems.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 100.

**552 Psychology of the Adult Years U G 3**

Theory and research related to adulthood as a sequence of psychological stages involving adjustment and coping behaviors; relationship of adulthood to other life-span stages.

Sp Qtr. 3 cl. Prereq: 100.

**560 Educational Psychology U G 3**

Critical appraisal of the implications for education of modern psychological findings in advanced educational psychology.

Su Qtr. 3 cl. Prereq: 100 and an additional 5 cr hrs in psych.

**571 Psychology of Developmental Disability U G 4**

Overview of developmental disability including etiology, early identification, treatment, and psychological impact on the family.

Au, Wi Qtrs. 3 cl. Prereq: 100 and an additional 5 cr hrs in psych, or written permission of instructor.

**594 Group Studies U G 1-5**

Topics vary from quarter to quarter and will be announced at least one month in advance.

Su, Au, Wi, Sp Qtrs. H594 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: 100 and an additional 5 cr hrs in psych. Repeatable to a maximum of 10 cr hrs.

**600 Psychology of Learning U G 4**

The study of principles which underlie the discovery, fixation, and retention of behavior; emphasis on theoretical formulation of the conditions necessary for learning and remembering.

Au, Wi Qtrs. 4 cl. Prereq: 100 and an additional 5 hrs in psych.

**601 Comparative Psychology U G 3**

Research on animal behavior by psychologists and ethologists; studies of the behavior of different species in the lab and in the field.

Wi Qtr. 3 cl. Prereq: 100 and an additional 15 cr hrs in psych or zoology, or permission of instructor.

**602+ Psychology of Listening and Reading U G 3**

Introductory survey of work on reading and the perception of speech; emphasis is on reading with a focus on the underlying perceptual and cognitive processes.

Au Qtr. 2 1 1/2-hr cl. Prereq: 100.

**603+ Visual Perception U G 3**

Principles, theories, and methods relevant to the study of visual perception; emphasis on the availability and usefulness of visual information.

Au Qtr. 3 cl. Prereq: 310 or permission of instructor.

**606+ Psychology of Perception U G 3**

Survey of principles of perceptual learning and development, adaptation to distorted stimulation, recognition memory, perceptual set and attention, relation of perception to action and communication.

Wi Qtr. 3 cl. Prereq: 310 or 603 or permission of instructor.

**608\* Introduction to Mathematical Psychology U G 3**

Survey of current topics in mathematical psychology; topics include measurement theory, scaling, utility theory, subjective probability, decision making in uncertain situations, choice theory.

Au Qtr. 3 cl. Prereq: 221 or equiv, or permission of instructor. Not open to students with credit for 615.

**609\* Introduction to Mathematical Models in Experimental Psychology U G 4**

A survey of mathematical models and theories in important areas of experimental psychology; models of perceptual and cognitive processes, memory, and learning.

Wi Qtr. 2 2-hr cl. Prereq: 221 and 608; or grad standing.

**610\* Contemporary Mathematical Models and Theories in Psychology U G 4**

Topics include axiomatic, geometric, conjoint measurement, functional measurement, and artificial intelligence models.

Sp Qtr. Prereq: 221 and 608; or grad standing.

**611 Educational Testing U G 3**

A service course for those majoring in elementary and secondary education, guidance, school psychology, and school administration; stress on use of measurements in school.

Su Qtr. 3 cl. Prereq: 100 and an additional 10 cr hrs in psych.

**612 Introduction to Cognitive Science U G 3**

Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.

Wi Qtr. 2 1 1/2-hr cl. Prereq: Permission of instructor or a total of 12 cr hrs from at least two of the following areas: cptr/inf, linguist, philos, and psych. Not open to students with credit for 794 (Sp Qtr 1989) or 794A (Wi Qtr 1990), Cptr/Inf 612, Linguist 612, Philos 612. Cross-listed in Computer and Information Science, Linguistics, and Philosophy.

**615 Psycholinguistics U G 5**

An introduction to high-level language processing, including word recognition, sentence understanding, and discourse processing.

Wi Qtr. 3 1 1/2-hr cl. Prereq: 601 or permission of instructor. Not open to students with credit for Linguist 615 or 671. Cross-listed in Linguistics.

**616+ Psychological Scaling U G 4**

Theory and applications of unidimensional and multidimensional scaling methods for proximity and preference data; emphasis on multidimensional scaling.

Wi Qtr. 2 2-hr cl. Prereq: 608 or grad standing.

**619+ Visual Information Processing U G 3**

Rapid visual decisions: how the visual representation is formed, stored, and interpreted, enabling one to read, drive, and look for and compare visual objects.

Sp Qtr. 3 cl. Prereq: 100 and an additional 7 cr hrs of psych beyond the 300 level (310 or 312 or 500 recommended).

**620 Human Performance U G 5**

Research and theory on perceptual, cognitive, and motor processes that limit performance; topics include memory, attention, pattern discrimination, motor control.

Au Qtr. 2 cl. Prereq: 100 and an additional 7 cr hrs of psych beyond the 300 level (310 or 312 or 500 recommended).

**624 Psychology of Monkeys and Apes U G 3**

Research about monkeys and apes with emphasis on their learning, arts, memory, curiosity, language, and neuropsychological problems.

Sp Qtr. 3 cl. Prereq: 100 or permission of instructor.

**625+ Introduction to Auditory Perception U G 3**

Theory and research in auditory perception; traditional psychoacoustic and new ecological approaches.

Sp Qtr. 3 cl. Prereq: 100, 220 or Stat 145 or 245, and 310.

**626 Sensory Psychobiology U G 3**

Introduction to neural mechanisms of sensation: transduction, neuroanatomy, neurochemistry, and neurophysiological coding mechanisms for vision, audition, somatosensation, visceral sensation, balance, taste, and smell.

Au Qtr. 1 2 1/2-hr cl. Prereq: 501 or Zoology 532 or 632, or permission of instructor.

**627 Developmental Psychobiology U G 4**

The psychobiological origins of mammalian behavior, including: neural development, sensorimotor and cognitive development, and recovery of function after brain damage.

Sp Qtr. 2 1 1/2-hr cl. Prereq: 313 or 501 or permission of instructor.

**630+ Psychology of Public Attitudes U G 3**

Attitude organization and change; study of the determinants of attitude.

Au Qtr. 3 cl. Prereq: 220 or Stat 145 or 245, and 320 or 367.01.

**652 Behavior Modification with Children and Youth U G 3**

Theory and practice of behavior modification; emphasis on experience with individual children and youth and consultation within applied settings.

Wi Qtr. 1 3-hr cl, lab arr. Prereq: 571 or equiv, 600, and permission of instructor. Not open to students with credit for 852.01.

**662 Psychology of Creativity U G 3**

A critical examination of conceptual, theoretical, and methodological problems related to the systematic study of creativity; special attention to background factors related to creative behavior.

Au Qtr. 3 cl. Prereq: 100 and an additional 10 cr hrs in psych.

**665+ Psychology of the Later Years U G 3**

Critical consideration of major gerontological issues facing aged adults; theories, methodologies, and research into human aging process.

Su, Wi, Sp Qtrs. 3 cl. Prereq: 100.

**681 Developmental Psychopathology of Childhood U G 3**

The description, etiology, and assessment of childhood psychopathologies such as autism, depression, drug abuse, hyperactivity; developmental approach is used.

Wi Qtr. 3 cl. Prereq: 100 and 550.

**684 Psychology of Delinquency U G 3**

Characterization, causation, and treatment; emphasis on current theories and research.

Su, Wi, Qtrs. 3 cl. Prereq: 551 or equiv.

**688† Laboratories in Industrial/Organizational Psychology U G 4**

Laboratory and field experience in job analysis, selection, validation, measurement, interviewing, training, leadership, and group and organizational processes.

Au, Wi, Sp Qtrs. 4 cl. Prereq: 100 and permission of instructor. Repeatable to a maximum of 40 cr hrs in any combination of alphabetical subdivisions.

- A— Job and Task Analysis
- B— Development of Criteria
- C— Selection Devices
- D— Placement and Classification
- E— Validation Procedures
- F— Individual Differences Measures
- G— Satisfaction Measures
- I— Training and Development
- J— Leadership
- K— Group Processes
- L— Organizational Processes
- M— Interviewing

**693 Individual Studies U G 1-15**

Individual reading or research projects by special agreement between instructor and student.

Su, Au, Wi, Sp Qtrs. Prereq: 100, an additional 9 cr hrs in psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grads in any combination of decimal subdivisions. These courses are graded S/U.

- 693.01 Clinical Psychology
- 693.02 Counseling Psychology
- 693.03 Developmental Psychology
- 693.04 Human Experimental Psychology
- 693.05 Industrial Psychology
- 693.06 Quantitative Psychology
- 693.07 Social Psychology
- 693.08 Psychobiology
- 693.09 Mental Retardation and Developmental Disabilities

**695 Seminars in Psychology U G 2-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor, and either 220 or Stat 145 or 245, and 17 cr hrs of psych course work above the 200 level; or grad standing. No more than 6 cr hrs in any combination of decimal subdivisions may be counted toward the undergrad major.

- 695.01 Clinical
- 695.02 Counseling
- 695.06 Quantitative
- 695.07 Social
- 695.08 Psychobiology

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 100 and written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Interprofessional Education G 3**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

Repeatable to a maximum of 9 cr hrs in any combination of decimal subdivisions; subdivisions not repeatable. Limited to students in allied medical professions, education, law, medicine, nursing, psychology, social work, and theology (Columbus Cluster of Theological Schools).

**700.01 Interprofessional Care G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.

Wi Qtr. 2 1½-hr cl.

**700.04 Interprofessional Seminar in Clinical Practice G 3**

Interprofessional teamwork in clinical settings.

Wi Qtr. 2½-hr cl, 5 hrs clinical. Prereq: Permission of instructor. Limited to students enrolled in child abuse and neglect study program.

**700.07 Interprofessional Approaches to Child Abuse and Neglect**

Interprofessional exploration of issues in the identification, treatment, and prevention of child abuse and neglect.

Au Qtr. Prereq: Permission of instructor.

**710 Laboratory in Test Design U G 3**

Practice in writing, editing, administering, and validating personality and ability measures.

Sp Qtr. 1 cl, 2 lab hrs. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Educational Services and Research, Family Relations and Human Development, Human Nutrition and Food Management, Nursing, Physical Education, Social Work, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.

Wi Qtr. 1 3-hr cl. Not open to students with credit for 717.01 in any of the cross-listed areas.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su Qtr. 1 2-hr cl. Not open to students with credit for 717.02 in any of the cross-listed areas.

**720 Psychology Applied to Sport U G 3**

Psychology applied to sport; focus on the athlete; consideration of special population (women, minorities, and youth); the sport psychologist's role.

Wi Qtr. 2 1½-hr cl. Prereq: 540 or psych major or grad standing or permission of instructor. Not open to students with credit for 794C Wi Qtr 1984 or 1985.

**737 Proseminar in Cognitive Science U G 2**

An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Sp Qtr. 1 2-hr cl. Prereq: Cptr/Inf 612, Linguist 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial Systems Engineering, Linguistics, Philosophy, and Speech and Hearing Science.

**740† Aging and Cognition: Developmental Perspectives U G 3**

An examination of the relationship between cognitive development and aging; topics include intelligence, memory, learning, perception, and sensation in relation to normal and pathological aging.

Wi Qtr. 2 1½-hr cl. Prereq: 100. Not open to students with credit for 794A Wi Qtr 1983 or Wi Qtr 1984.

**H783 Honors Research U 3**

A program of readings, conferences, and reports selected to aid the student in completing a senior honors thesis.

Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Candidate for degree *with distinction*. Repeatable to a maximum of 9 cr hrs including cr hrs earned in H599.

**788†\* Laboratory in Attitude Measurement U G 3**

Wi Qtr. 1 cl, 4 lab hrs. Prereq: Written permission of instructor.

**794 Group Studies U G 1-5**

The topics vary from quarter to quarter and will be announced at least one month in advance.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 15 cr hrs in psych at the 500 level or above and permission of instructor.

**800 Advanced Experimental Laboratory G 3-15**

Advanced training in the experimental and quantitative methods in the several areas of general experimental psychology and comparative psychology.

Au Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**801 Advanced Theoretical Psychology G 4**

A description and evaluation of the major advanced psychological behavior theories.

Wi, Sp Qtrs. 4 cl.

**802 Advanced Psychology of Motivation G 3**

An evaluation of the experimental and theoretical material on: physiological drives; development and maintenance of secondary motives; perception and motivation, conflict.

Wi Qtr. 3 cl. Prereq: 20 cr hrs in psych including 311 or 600 or permission of instructor.

**803† Theories of Perception G 3**

Survey of history and theories of perception, emphasizing different concepts of stimulation, research methods, and the roles of prior experience, motor performance, and attention.

Sp Qtr. 3 cl.

**804 Advanced Comparative Psychology G 3**

Contemporary literature in comparative psychology.  
Sp Qtr. 3 cl. Prereq: 601.

**805 Principles of Psychophysiology G 5****805.01 Principles of Psychophysiology I**

Introduction to psychophysiology; history of the study of psychological phenomena related to the body; overview of methods of psychophysiology; concepts and principles of behavior to emerge from psychophysiological research.

Au Qtr. 2 1½-hr cl. Prereq: Permission of instructor.

**805.02 Principles of Psychophysiology II**

Introduction to systemic psychophysiology; noninvasive methods for measuring physiological events; paradigms for investigating psychological questions using noninvasive physiological measures; and concepts and principles of behavior to emerge from psychophysiological research.

Wi Qtr. 2 1½-hr cl. Prereq: 805.01 or permission of instructor.

**805.03 Special Topics in Psychophysiology G 3**

Introduction to selected topic areas in psychophysiology; theories in psychophysiology; problems and progress in psychophysiological research.

Sp Qtr. 2 1½-hr cl. Prereq: 805.02 or permission of instructor.

**806 Neuropsychology I G 3**

An introduction to the principles governing neural integrative mechanisms; morphology of nervous systems of the vertebrates; transmission in individual neurons; properties of junctions in integrative networks; elementary laws of reflex action.

Au Qtr. 3 cl.

**807 Neuropsychology II G 3**

Functional differentiation of the nervous systems of vertebrates; properties of principle division of the brain; organizations of the forebrain; mechanisms of sleep and waking rhythm; mechanisms of perception.

Wi Qtr. 3 cl. Prereq: 806.

**808 Neuropsychology III G 3**

Neural mechanisms of motivation and behavioral plasticity; control of major cyclical phenomena, including hunger, thirst, and reproduction; reactions to aperiodic and continued stresses; mechanisms of the learning process.

Sp Qtr. 3 cl. Prereq: 807.

**809 History and Systems of Psychology G 3**

Development of psychology from the philosophical antecedents to its present status as a science and a profession; assignments in original sources as far as possible.

Au Qtr. 3 cl. Prereq: 16 cr hrs in psych.

**811 Seminar in Experimental Psychology G 2**

Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**814\* Psychological Issues in Knowledge Representation G 3**

Psychological approaches to how knowledge is represented by humans, including empirical and architectural constraints, format differences, generalization abilities, and development of representations.

Su, Au Qtrs. 1 2-hr cl, 1 hr arr.

**815+\* Decision Processes G 4**

Introductory course in the application of statistical decision theory as a normative model and analytic technique in the experimental study of cognitive processes.

Wi Qtr. 4 cl. Prereq: Grad standing in psych, undergrad inferential statistics strongly recommended.

**816\* Human Performance Theory G 4**

Research and theory on the discrete and on the continuous cases of human information processing; topics include input processes, central processing functions, and output processes.

Wi Qtr. 3 cl. Prereq: 620 or written permission of instructor.

**817 Seminar in Human Performance G 3**

Wi Qtr. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**818 Current Frameworks in Industrial and Organizational Psychology G 4****818.01 Advanced Personnel Psychology**

Content and methodology of personnel psychology, including such topics as job analysis, interviewing, test validation, selection and placement systems, performance appraisal, and training.

Au Qtr. 2 2-hr cl. Not open to students with credit for 621.

**818.02 Motivation and Attitudes in Work Organizations**

Courses and consequences of attitudes and motivation in organizations, with emphasis on theory and research.

Wi Qtr. 2 2-hr cl. Not open to students with credit for 623.

**818.03 Psychology of Organizational Effectiveness**

Effects of organizations and groups on individual behavior, including interpersonal processes (groups, leadership), structural effects (task, technology, reward systems) and organizational conflict and change.

Sp Qtr. 2 2-hr cl. Not open to students with credit for 622.

**819 Seminars in Industrial and Organizational Psychology G 3**

2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

A— Psychology of Individual Effectiveness.

B— Psychology of Organizational Effectiveness.

C— Human Motivation

D— Theoretical Developments and Issues. Au, Wi, Sp Qtrs.

E— Current Practices and Trends

**820 Fundamentals of Factor Analysis G 4**

Basic Common Factor Model and its application in psychology; model, communality estimation, factor extraction, orthogonal and oblique rotation, factor scores, confirmatory factor analysis use of computer programs.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**821 Seminar in Field and Experimental Research Methods G 3**

Logic of the research process, uses and limitations of major research strategies, and application of specific data gathering techniques with special emphasis on field settings.

Au, Wi Qtrs. 3 cl. Prereq: Permission of instructor, and 821A for 821B, and 821B for 821C. Repeatable to a maximum of 9 cr hrs.

**822 Psychological Assessment G 3**

A critical survey and evaluation of concepts and techniques of assessment of intelligence, special aptitudes, and personality.

Au Qtr. 3 cl.

**824 Seminars in Psychological Measurement G 2-4**

Repeatable to a maximum of 10 cr hrs.

A— Models for Psychophysics. Sp Qtr.

B— Models for Measurement and Scaling

C— Models for Interpersonal Analysis

**826 Statistics in Psychology G 4**

Basic concepts of descriptive and inferential statistics; includes estimation, hypothesis testing, and introductory treatment of analysis of variance, correlation and regression, and non-parametric techniques.

Au Qtr. 2 1½-hr cl, 2 lab hrs. Prereq: 220 or equiv and grad standing in psych, or permission of instructor.

**827 Analysis of Variance G 4**

Statistical inference in analysis of variance designs; basic concepts and procedures in one-way designs; factorial, repeated measures, randomized blocks, mixed models designs; procedures for planned and post hoc comparisons.

Wi Qtr. 2 1½-hr cl, 2 lab hrs. Prereq: 826 or equiv.

**828 Correlational Analysis G 4**

Correlation and regression techniques for quantitative and qualitative data analysis; simple linear regression and correlation, multiple linear regression, nominal scales, interactions; other related multivariate methods; use of computer programs.

Sp Qtr. 2 1½-hr cl, 2 lab hrs. Prereq: 827 or equiv.

**830 Covariance Structure Models G 4**

Theory and methods of testing models of covariance structures; general mathematical model, identification, parameter estimation, goodness of fit, model modification, and the use of computer programs such as LISREL.

Wi Qtr. 2 2-hr cl. Prereq: 820 and 828, or permission of instructor.

**831 Seminars in Psychological Statistics G 1-5**

1-5 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 40 cr hrs.

A— Analysis of Variance

B— Experimental Design

C— Factor Analysis

D— Mathematical Models and Theory

E— Non-Parametric Statistics. Au Qtr.

F— Quasi-Experimental Design

G— Advanced Multivariate Analysis

I— Current Practices and Trends. Au, Wi Qtrs.

J— Computer Simulation Research

K— Special Topics

**832 Sociomoral Development G 4**

Focus upon recent work stemming from Piagetian and Eriksonian approaches; relation of specific theoretical perspectives to current issues and findings emphasized.

Au, Sp Qtrs. 2 1½-hr cl.



**833 Methodological Problems in Developmental Psychology G 3**

A bridge from formal statistics to current research in developmental and educational psychology with repeated measure, time series data, indices of change, etc.

Sp Qtr. 3 cl. Prereq or concur: 826 and 827 or equiv with written permission of instructor. Repeatable to a maximum of 6 cr hrs.

**834 Psychology of Infancy G 3**

Psychological development during the first four years of life with particular reference to neonatal period and research methodology in studies involving infants.

Wi Qtr. 1 2 1/2-hr cl. Prereq: 837 or permission of instructor.

**835 Child Development G 3**

Major developmental aspects of childhood; review of theory, methodology, research studies, and historical and contemporary writing about children; consideration of interdisciplinary approaches.

Wi Qtr. 3 cl. Prereq: 837 or permission of instructor.

**836† Developmental Psychology G 3****836.01 Adolescence**

Comprehensive view of adolescence as a stage in human development; theory, methodology, research and application to family, school and community; relation to other developmental stages.

Sp Qtr. Prereq: 826, 835 or equiv, and permission of instructor.

**836.02 Maturity and Aging**

Survey of psychology of adulthood; normative episodes, problems of stress, adaptation, social interaction and physical and intellectual functioning; maturity in modern and historical cultures.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**837 Nature and Direction of Human Development G 3**

Critical consideration of human development, selected theories and methods of investigation including units of measurement; emergence of mind considered through the phylogenetic and ontogenetic sequence.

Au Qtr. 3 cl.

**840 Practicum in Developmental Psychology G 3-9**

Observation of children in a representative variety of clinical settings with particular reference to developmental phenomena of growth and behavior; application of research, diagnostic and intervention methodology.

Su, Au, Wi, Sp Qtrs. 1 cl, lab hrs. Prereq: 837, 2nd yr grad standing in psych, and permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**842 Seminar in Developmental Psychology G 3**

2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. Selected topics.

A— Current Theoretical Issues

B— Development of Dimensions of Cognitive Differences

C— Development of Social Cognition

D— Cultural Influences on Human Development: Ethnic Minority Children and Adolescents

E— Social Development during Adolescence

F— Development of Creative Behavior

G— Deviant Behavior in Childhood and Adolescence

I— Aging and Senescence

J— The Development of the Self Concept

K— Cognitive Development: Issues in Cognitive Development

L— Development of Language: Deafness and Communication Disorders

**843 Theories of Human Development G 3**

Comparative presentation of significant major historical and modern developmental theories with specific evaluation of their relevance in the formulation of a comprehensive psychological theory.

3 cl. Prereq: 837 and 2nd yr grad standing.

**843.01 Analytic and Social Learning Theory**

Wi Qtr.

**843.02 Cognitive, Organic, and Structural Theories**

Sp Qtr.

**844 Psychopathology of Childhood G 3**

A study of psychopathological conditions of childhood, such as autism, schizophrenia, neurosis, acting out, and behavior problems from a developmental point of view.

3 cl. Prereq: Permission of instructor.

**844.01 Concepts**

Sp Qtr.

**844.02 Disturbances****845 Child Psychotherapies G 3**

Study of several major modes of psychotherapy with children; consideration of theoretic foundations, principal techniques, range of applicability, and presumed means of effecting change.

Au Qtr. 1 2 1/2-hr cl. Prereq: 844 or equiv and permission of instructor.

**846 Advanced Educational Psychology G 3**

Critical consideration of research and theory in developmental learning and measurement as relevant to education; special attention to historical positions, assumptions, and current literature.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**850 Adaptive Behavior and Developmental Disability G 3**

Overview of the psychology of adaptation and its relationship to the classification, assessment, and modification of mental retardation and developmental disability.

Sp Qtr. 3 cl. Prereq: 857 or permission of instructor.

**854 Issues in Adult Psychopathology G 4**

To survey the phenomena of psychopathology in adults and become familiar with the present diagnostic system used by the majority of mental health professionals.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: Permission of instructor.

**855 Child Behavior Assessment and Consultation G 3**

Theory of psychological assessment and consultation; practice in observation, interviewing, testing, documentation of behavior, writing reports and consulting on the learning and behavioral problems of children.

**855.01† Introduction**

Survey of validity data on the most used assessment techniques and practice in combining data for selected clinical cases.

3 cl. Prereq: Permission of instructor.

**855.02 Psychodiagnostic Assessment I**

Psychodiagnostic assessment with major emphasis on administration, scoring and utilization of the Rorschach psychodiagnostic technique.

Au Qtr. 3 cl. Prereq: 850, 2nd yr grad standing in psych, and permission of instructor.

**855.05 Psychodiagnostic Assessment II**

Psychodiagnostic assessment with major emphasis on the TAT: administration, scoring and utilization.

Wi Qtr. 3 cl. Prereq: 850, 855.02 or permission of instructor, and 2nd yr grad standing in psych.

**855.06 Psychodiagnostic Assessment III**

Psychodiagnostic assessment with major emphasis on the Draw-a-Person Test, and the Bender-Gestalt Test; administration, scoring and utilization, and relationship to other tests.

Sp Qtr. 3 cl. Prereq: 850, 855.02, 855.05, or permission of instructor, and 2nd yr grad standing in psych.

**856 Child Behavior Assessment and Therapy G 3**

Assessment and treatment approaches for child behavior.

Sp Qtr. 2 1 1/2-hr cl. Prereq: Permission of instructor.

**857 Psychological Problems in Mental Retardation G 4**

Advanced study of psychological aspects of mental retardation; topics include theories of mental retardation, studies of sensory and perceptual processes, cognitive chronically ill and neurologically impaired.

Au Qtr. 4 cl. Prereq: Permission of instructor.

**859 Seminars in the Psychology of Exceptional Children and Adults G 3**

Advanced topics in research strategies and methodology; specialized topics on the growing edge of the psychology of exceptional children and adults.

Wi Qtr. 2 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

**860 Theories of Personality G 3**

A critical consideration of the theories of personality structure psychology.

Su, Au Qtrs. 3 cl. Prereq: Advanced work in personality and social psych and permission of instructor.

**861 Clinical Psychology**

Introduction to the theory and use of clinical methods in psychology, designed for first-year graduate students in clinical psychology.

Prereq: Permission of instructor.

**861.01 Lecture G 3**

Au Qtr. 3 cl. Repeatable to a maximum of 9 cr hrs.

**862 Problems of Human Behavior**

Introduction to the study of human behavior problems; practicum involves observation and participation in field settings.

Prereq: Permission of instructor.

**862.01 Lecture G 3**

Au Qtr. 2 cl. Repeatable to a maximum of 6 cr hrs.

**863 Psychological Dynamics**

Special topics in the study of behavior.

Prereq: Permission of instructor.

**863.01 Lecture G 3**

Au Qtr. 3 cl. Repeatable to a maximum of 9 cr hrs.

**864 Psychological Appraisal**

Concepts and procedures for appraising human behavior.

Prereq: Permission of instructor. Courses (except 864.01) ordinarily involve both classroom and practicum experiences.

**864.01 Lecture G 3**

Theories and methods of psychological appraisal; integration of different theories and approaches.

Au Qtr. 3 cl.

**864.04\* Actuarial Appraisal G 1-4**

Wi Qtr. 1-4 cl, and/or 2-8 lab hrs. Repeatable to a maximum of 8 cr hrs.

**864.06\* Special Topics G 1-4**

Su Qtr. 1-4 cl, and/or 2-8 lab hrs. Repeatable to a maximum of 8 cr hrs.

**866 Interventions with Individuals G 1-5**

Concepts and practices of various interventions into the troubled behavior of individuals.

1-5 cl and/or 2-10 lab hrs. Prereq: Permission of instructor. Courses ordinarily involve both classroom and practicum experience. Each decimal subdivision repeatable to a maximum of 15 cr hrs.

**866.01† Individual Psychotherapy****866.02 Behavior Modification**

Au Qtr.

**866.04† Novel and Experimental Approaches****867 Seminar in Clinical Abnormal Psychology G 3**

Au, Wi, Sp Qtrs. 2 cl. Prereq: Permission of instructor. Two sections may be offered in any one qtr.

**867.01 Psychopathology**

Theory and research on the major classes of adult psychopathology.

Au Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**867.02† Schizophrenia**

An intensive review of theory and research in schizophrenia; historical as well as contemporary conceptualizations.

Sp Qtr. 1 3-hr cl. Prereq: Permission of instructor.

**869 Research Methodology G 2**

Discussion of conceptual and methodological issues related to the ongoing work of graduate students and faculty.

Wi, Sp Qtrs. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.

**870 Advanced Social Psychology G 3**

Survey of research and theory in experimental social psychology; covers attitudes, social cognition, group processes, and related topics.

Au Qtr. 3 cl. Prereq: Grad standing in psych or permission of instructor.

**871† Professional Altruism and Social Policy G 3**

An examination of the helping specialties in terms of the languages of social policy and professionalism.

Sp Qtr. 3 cl.

**872 Social Psychology Laboratory G 3**

Advanced training in methods and data collection in the areas of social psychology, laboratory, and field experience.

Au, Wi, Sp Qtrs. 2 cl, 1 lab hr. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**873 Seminar in Social Psychology G 3 or 5**

Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. Most subdivisions offered every other year.

A—Contemporary Attitude Theory and Research.

B—Social Behavior and Personality. Wi Qtr.

C—Systematic Theory in Social Psychology. Au Qtr.

D—Social Cognition.

E—Current Research Trends. Au, Sp Qtrs.

F—Group Processes.

**874 Cognitive Psychology G 4**

Survey of paradigms, procedures, theories, and findings of research on human cognitive structures and processes; includes mental representation, attention, categorization, memory.

Wi Qtr. 2 2-hr cl. Prereq: 20 cr hrs in psych or permission of instructor.

**875 Practicum in Social Psychology G 3**

Survey and supervised experience in using the technique and research designs of social psychology.

Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**875.01 Practicum in Social Psychology I**

Au Qtr. 2 cl, 2 lab hrs.

**875.02 Practicum in Social Psychology II**

Wi Qtr. 2 cl, 2 lab hrs.

**875.03 Practicum in Social Psychology III**

Sp Qtr. 2 cl, 2 lab hrs.

**876 Research Methods in Social Psychology G 3**

Laboratory research, field research, research writing, and criticism.

3 cl. Prereq: Permission of instructor.

**876.01 Research Methods in Social Psychology I**

Introduction to methods in experimental social psychology; focus on laboratory-based procedures and on problems and issues of scientific inference.

Au Qtr.

**876.02 Research Methods in Social Psychology II**

Introduction to quasi-experimental methods; focus on problems and issues in conducting non-laboratory and field research.

Wi Qtr.

**876.03 Research Methods in Social Psychology III**

Introduction to research writing and critique; focus on preparation of reviews of theoretical and empirical papers.

Sp Qtr.

**877 Human Learning I: Learning G 4**

Introductory survey of the theoretical and empirical issues in human learning; emphasis on the analysis of learning tasks and the conditions under which learning occurs.

Au Qtr. 2 2-hr cl.

**878 Human Learning II: Memory G 4**

Theoretical issues and experimental research on the topic of human memory.

Wi Qtr. 2 2-hr cl.

**879 Human Learning III: Cognitive Processes G 4**

Theoretical and experimental research in several areas of cognition including concept learning, problem solving, and reasoning.

Sp Qtr. 2 2-hr cl. At least 10 cr hrs of undergrad psych course work.

**881† Social Ecology: Implications for Counseling G 4**

Advanced graduate students relate person-environment interaction theory to practice in counseling, educational, and community settings.

Sp Qtr. 2 cl. Prereq: Written permission of instructor.

**882 Psychology of Counseling****882.01 Lecture G 3**

Theoretical, research, cultural and professional bases for counseling; fundamentals of interviewing; counseling procedures and techniques.

Au Qtr. 3 cl. Prereq: 13 cr hrs in psych.

**882.02 Laboratory G 2**

A series of practical exercises designed to apply the principles of the psychology of counseling.

Au Qtr. 4 lab hrs. Prereq: Permission of instructor.

**883 Counseling Diagnostics****883.01 Lecture G 3**

Theory and application of interview data, observed behavior, test results, and biographical information as a basis for diagnostics in counseling and evaluation.

Wi Qtr. 3 cl. Prereq: 13 cr hrs in psych.

**883.02 Laboratory G 2**

Survey of specific diagnostic techniques and tests and application through role playing.

Wi, Sp Qtrs. 4 lab hrs. Prereq: Permission of instructor. This course is graded S/U.

**884 Psychology of Career Development****884.01 Lecture G 4**

A survey and critical analysis of literature and research regarding work, work adjustment, career choice and development, vocational exploration, and variables associated with career development.

Sp Qtr. 2 2-hr cl.

**884.02 Laboratory G 2**

A series of practical exercises designed to apply the principles of the psychology of career development.

Sp Qtr. 1 2-hr lab. Prereq: 882 or equiv and written permission of instructor.

**885 Beginning Practicum in Counseling G 4**

Supervised practice in assisting college students in their adjustment to college; emphasis on diagnosis and treatment; special help given to interviewing procedures.

Su, Au, Wi, Sp Qtrs. 2 cl, 8-10 lab hrs. Prereq: 883 and written permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

**886 Advanced Practicum in Counseling G 4**

Supervised practice in (a) assisting college students and adults with problems of personality adjustments or (b) supervising techniques through observation and discussion of work with other counselors.

Su, Au, Wi, Sp Qtrs. 2 cl, 8-10 lab hrs. Prereq: 885 and written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**887 Seminar in Counseling Psychology G 3**

Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

A— Counseling Older Adults. Sp Qtr.

B— Behavioral Therapy

C— Tests and Assessment in Counseling

D— Counseling Supervision. Wi, Sp Qtrs.

E— Ethics and Professional Issues. Wi Qtr.

F— Cognitive Approaches to Counseling

G— Counseling Women

I— Psychodynamic Theories of Counseling

J— Group Counseling

K— Research in Study Skills

L— Politics of Languages in Counseling and Consultation

M— Existential and Phenomenological Approaches to Counseling. Sp Qtr.

P— Social Influence Process in Counseling Psychology

R— Marriage and Family. Sp Qtr.

T— Multicultural Issues in Counseling Psychology. Sp Qtr.

V— Scale Construction and Evaluation

Y— Adult Career Development Problems

Z— Special Topics

**888 Psychological Study of Individuals and Groups G 3**

Basic concepts and techniques of student personnel work.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**889 Practicum in Clinical Psychology G 1-30**

Supervised practice in psychological assessment and intervention in the department's psychoeducational clinic.

Su, Au, Wi, Sp Qtrs. 1-2 client contact hrs; 1-2 supervision hrs. Prereq: Permission of instructor. Open only to students in clinical psychology. Repeatable to a maximum of 30 cr hrs.

**912 Behavioral Pharmacology G 3**

Introduction to the foundations of behavioral pharmacology; integration of human clinical and animal experimental psychopharmacological research.

Wi Qtr. 1 3-hr cl. Prereq: 501 and 502, or permission of instructor.

**913 Cognitive Neuroscience G 3**

Neuronal mechanisms of information processing.

Sp Qtr. 1 3-hr cl. Prereq: 806 and 807, or permission of instructor.

**980 Supervised Field Experience in Psychology G 1-15**

Supervised experience, either research or operational, in any agency doing professional psychological work such as a school system, a psychological clinic, an industrial personnel department, or a counseling center.

Su, Au, Wi, Sp Qtrs. Prereq: Psych 2nd yr standing and approval of local staff of area in which student is specializing. Supervised by member of local staff and some member of the outside agency approved by the Dept of Psychology. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**999 Research in Psychology G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Public Policy and Management

202 Hagerty Hall, 1775 College Road, 292-8696

**631 Federal Finance and Fiscal Policy U G 3**

The economics of government spending and taxation; analysis of the fiscal role and instruments and their effects on the economy.

Au Qtr. 1 2½-hr cl. Prereq: Econ 530 or equiv. Not open to students with credit for 630 or Econ 631. Cross-listed in Economics.

**633 State and Local Government Finance U G 3**

Economic analysis of revenues and expenditures of state and local governments; vertical and horizontal relationships between agencies and units; specific problems in these areas.

Wi Qtr. 1 2½-hr cl. Prereq: Econ 530 or equiv. Not open to students with credit for Econ 633. Cross-listed in Economics.

**730 Public Finance U G 5**

Comprehensive survey and analysis of the principle fiscal activities of contemporary governments; logic of public sector activity, taxation principles and practice, intergovernmental relations, and current fiscal problems.

Wi Qtr. 2 2-hr cl. Prereq: 705 and grad standing, or permission of instructor. Not open to students with credit for 530. Cross-listed in Economics.

**795 Public Policy: The Business-Government Relationship U G 4**

Business tools and strategy for influencing government; evolution and direction of public policy toward business.

2 2-hr cl. Prereq: Sr standing or permission of instructor.

**796† Managing in the Political Environment U 4**

Introduction to public policy process and stakeholder approaches to issue management; strategic options and policy tools (political action committees, advocacy, and image advertising), state policy incentives, and international relations.

2 2-hr cl. Prereq: Sr standing or permission of instructor.

**797† Interdepartmental Seminar U G 1-5**

Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.

Repeatable by permission.

**H797† Public Policy: The Business-Government Relationship U G 4**

Business tools and strategy for influencing government; evolution and direction of public policy toward business.

2 2-hr cl. Prereq: Sr standing or permission of instructor.

**801 Public Policy Formulation and Administration G 5**

Analysis of the operating environment of the public administrator; public policy processes, public organization behavior, and policy formulation in the U.S. federal system.

Au Qtr. 2 2-hr cl. Prereq: Polit Sc 300 or equiv.

**802 Legal Environment of Public Administration G 3**

An examination and analysis of the constraints imposed upon public administrative processes by the legal environment including judicial policy-making and the evolving legal order.

Wi Qtr. 2 1½-hr cl.

**803 Public Policy Implementation G 4**

Policy implementation process in a political setting emphasizing planned changes; organizational design, systems analytic program management and evaluation; conflict management within a public bureaucracy.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 801.

**804 Concepts and Methods of Program Evaluation G 3**

Provides an understanding of the conceptual, methodological, bureaucratic, political, and organizational issues surrounding evaluation research.

Sp Qtr. 1 2½-hr cl. Prereq: 822 or equiv. Not open to students with credit for 880A05.

**808 Policy Problem Seminar I G 3**

Multidisciplinary seminar integrated with field experience in the solution of actual public administrative and policy problems; organized around problem areas.

Au Qtr. Prereq: Permission of instructor. 2-qtr sequence with 809. Progress graded. Final grade assigned for both 808 and 809 at completion of 809.

**809 Policy Problem Seminar II G 3**

Continuation of 808.

Wi Qtr. Prereq: 808. Offered in a series with 808.

**810 Strategic Management G 3**

The conducting of a strategic assessment of an agency; identifying strengths, weaknesses, opportunities, and threats; and with development of accompanying management strategy.

Au, Sp Qtrs. 2 2-hr cl. Prereq: 803 or permission of instructor. Not open to students with credit for 880B06.

**811 Public Management and Human Relations G 4**

Development of management skills essential for beginning and mid-level managers and supervisors in public sector agencies.

Wi Qtr. 1 3-hr cl. Not open to students with credit for 880H06 or 880J06.

**820 Problem Formulation and Research Methods in Public Administration G 3**

Introduction to types of problems encountered in public policy and management; problem formulation and basic research methods tools required to tackle them.

Au Qtr. 2 2-hr cl. Prereq: College algebra and Statistics.

**821 Governmental Information Systems Administration G 3**

Critical study of the administration and design of management information systems for public agencies; selected case studies.

Wi Qtr. 2 2-hr cl.

**822 Data Analysis in Public Administration G 3**

Multivariate model building using theoretical and exploratory data analysis perspectives for use in public sector decision support systems; public sector case studies.

Sp Qtr. 2 2-hr cl. Prereq: 820.

**823 Systems Analysis for Public Policy Decisions G 3**

Studies in the application of systems analysis to administrative and policy problems in the public sector; selected case studies and problems.

Au Qtr. 2 2-hr cl.

**830 Economics of Public Policy and Management G 4**

Economic analysis applied to problems of public policy selection and government management operations; efficiency criteria, market failure, and public choice applied to administrative decision-making.

Au Qtr. 2 2-hr cl. Prereq: Econ 200 or equiv.

**834 Public Budgeting and Spending Decisions G 3**

Budgeting as analysis of resource allocation, planning evaluation, and control; tools of analysis for program budgeting and measurement of program results; case studies.

Sp Qtr. 2 1½-hr cl. Prereq: Econ 730 or equiv.

**835 Seminar in Fiscal Administration G 3**

Current professional practices and issues in public sector fiscal administration, including budget and expenditure administration, revenue administration, financial management, and borrowing and debt management.

Sp Qtr. 1 2-hr cl. Prereq: 834.

**836 Financial Management G 3**

Exploration of capital programming and budgeting, debt management, and other aspects of major urban capital developments.

Au Qtr. 1 2½-hr cl. Prereq: Econ 730. Not open to students with credit for 880C02.

**837† Grants Policy and Administration G 4**

Investigation of grant-related policy issues, the distributional impact of grant policy, and how federal grants may have influenced city-suburban hardship disparities.

1 3-hr cl. Prereq: 730. Not open to students with credit for 880B02.

**840 Criminal Justice Policy and Management G 3**

Provides an overview of the criminal justice system with a focus on structural, organizational, and micro-level aspects of the criminal justice process.

Au Qtr. 1 2½-hr cl. Not open to students with credit for 880A01.

**841 Juvenile Justice System G 3**

Similarities and differences in juvenile and criminal justice processes are discussed, and major policy and management issues in the administration of juvenile justice are explored.

Wi Qtr. 1 2½-hr cl.

**850 The Political Economy of Administrative Regulation G 3**

Development of an understanding of the origin, intent, and technical elements of administrative regulation with special reference to economic and social regulation.

Au Qtr. 1 2-hr cl.

**851 Current Issues, Practices, and Concepts in Administrative Commission Regulation G 3**

Focus on the economic regulation of transport, power, and communications, and the social regulation of business in the form of environmental and safety standards.

Sp Qtr. 1 2-hr cl.

**852 Governmental and Not-for-Profit Accounting G 3**

The application of accounting principles to governments and other not-for-profit entities; problems relating to funds, appropriations, and budgetary controls.

Au Qtr. 2 1½-hr cl. Prereq: Accting 711 or equiv or permission of instructor. Cross-listed with Accounting and Management Information Systems.

**870 Urban Policy and Management I G 3**

Management processes affecting city growth or decline, and issues facing those involved in the administration of an urban area.

Au Qtr. 2 1½-hr cl.

**871 Urban Policy and Management II G 3**

Introduction to the field of economic development, emphasizing the role of public management.

Wi Qtr. 2 1½-hr cl. Prereq: 870.

**880 Seminar on Advanced Problems in Public Policy and Management G 1-6**

Special studies of selected problems which may include readings, case studies, internships, field investigations, simulation, system analysis, role playing, team teaching, and other experimental techniques.

Su, Au, Wi, Sp Qtrs. Repeatable.

**880.02 Fiscal Policy and Management****880.04 Human Resources Policy and Management****880.05 Management Information Systems' Administration****880.06 Public Policy and Management****880.07 Regulation Policy and Management****880.08 Urban Policy and Management****890 Research Methods in Public Administration G 3**

Logic of inquiry for public policy and management.

Au Qtr. 2 2-hr cl.

**893 Individual Studies G 1-6**

Advanced individual studies in public policy and management.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing in pub pol&m and written permission of instructor. Repeatable to a maximum of 15 cr hrs including cr hrs in decimal subdivisions. This course is graded S/U.

**894 Group Studies G 1-6**

Advanced group studies in public policy and management.

Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs including cr hrs in decimal subdivisions.

**899 Interdepartmental Seminar G 1-5**

Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

Au, Wi, Sp Qtrs. Arr. Repeatable by written permission.

**998 Research in Public Administration: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs.

**999 Research in Public Administration: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs.

## Radiologic Technology

School of Allied Medical Professions

340 School of Allied Medical Professions Building, 1583 Perry Street, 292-0571

**200 Careers in Radiologic Technology U 1**

Investigation of career opportunities, including roles and responsibilities, education, credentialing requirements, and current and future employment opportunities.

Au Qtr. 1 cl.

**310 Patient Care in Radiography U 2**

Principles of patient care including analysis of ethical and legal issues pertaining to the delivery of radiological services. Diesen.

Au Qtr. 2 cl. Prereq: Enrollment in Radiologic Technology Division.

**411 Radiographic Procedures I U 4**

Principles of radiography of the chest, bronchial tree, abdomen, urinary systems, alimentary tract, and appendicular skeleton, with application in the laboratory. Diesen.

Au Qtr. 3 cl, 1 2-hr lab. Prereq: Permission of instructor and enrollment in rad tech; concur: 440.

**412 Radiographic Procedures II U 4**

Principles of radiography of the vertebral column, spinal canal, bony thorax, cerebral and visceral cranium, mammary glands, and reproductive systems. Diesen.

Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 411.

**425 Principles of Radiologic Imaging I U 3**

Investigation of the principles of radiation protection and radiologic imaging; including accessory equipment used in radiology departments. Ballinger.  
Au Qtr. 3 cl. Prereq: Enrollment in rad tech.

**426 Principles of Radiologic Imaging II U 4**

Evaluation of image quality, including sensitometry, processor monitoring, and accessory devices. Finney, Ballinger.  
Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 425.

**440 Applied Radiologic Technology I U 1-6**

Clinical application of diagnostic imaging and therapeutic procedures performed in radiology. Diesen.  
Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in rad tech. Repeatable to a maximum of 18 cr hrs. A minimum of 17 cr hrs must be completed.

**471 Radiologic Physics I U 3**

An analysis of the production of X-rays including X-ray circuitry. Kowalczyk.  
Sp Qtr. 3 cl. Prereq: Enrollment in rad tech.

**530 Advanced Radiographic Exposure U 4**

Investigation of technique exposure systems, image receptor technology, imaging equipment, and quality control as a means for controlling radiographic exposure. Finney.  
Au Qtr. 3 cl, 1 2-hr lab. Prereq: 425.

**540 Applied Radiologic Technology II U 1-6**

Continuation of 440 emphasizing the more complex diagnostic and therapeutic procedures. Diesen.  
Su, Au, Wi, Sp. Qtrs. Prereq: Enrollment in rad tech and completion of 17 cr hrs of 440. Repeatable to a maximum of 24 cr hrs. A minimum of 22 cr hrs must be completed.

**550 Practica U 2**

Theory and experience in selected radiology specialties.  
Prereq: Enrollment in rad tech and permission of instructor. Repeatable to a maximum of 8 cr hrs; individual subdivisions repeatable as electives. 4 cr hrs required of rad tech majors.

**550.41 Cardiovascular and Interventional Radiologic Procedures**

Theory and clinical education in diagnostic and therapeutic radiologic procedures. Bruckner.  
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education.

**550.42 Computed Tomography**

Supervised clinical education and instruction in the theory and operation of CT units in different health care facilities. VanDervort.  
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education.

**550.60 Magnetic Resonance Technology**

Instruction and experience in the performance and interpretation of magnetic resonance. Vassila.  
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education.

**550.65 Mammography**

Supervised clinical education and instruction in mammography, including the psychological aspects, anatomy, pathology, imaging procedures, and evaluation of quality images. Wadlington.  
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education.

**550.75 Pediatric Imaging Procedures**

Supervised clinical education and instruction in pediatric imaging, including the psychologic needs, pediatric anatomy, and pediatric imaging procedures and techniques. Ekers.  
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education.

**560 Medical Imaging Modalities U 3**

Investigation of the basic physical principles of medical imaging modalities and radiation oncology. Finney.  
Sp Qtr. 3 cl. Prereq: Enrollment in rad tech.

**565 Administrative Aspects of Radiologic Technology U 2**

Analysis of radiology department management, evaluation of radiographic equipment, federal equipment specifications, accreditation, and licensure. Ballinger.  
Wi Qtr. 2 cl. Prereq: Enrollment in rad tech.

**571 Applied Diagnostic Medical Sonography U 2**

Instruction and experience in the performance and interpretation of sonographic images.  
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. Prereq: Enrollment in rad tech and permission of instructor. Repeatable to a maximum of 6 cr hrs. Not open to students with credit for 550.50.

**572 Applied Nuclear Medicine U 2**

Observation and participation in performing static and dynamic examinations requiring the use of radiopharmaceuticals. Nicol and Reid.  
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. Prereq: Enrollment in rad tech and permission of instructor. Not open to students with credit for 550.70. Repeatable to a maximum of 6 cr hrs.

**573 Applied Radiation Oncology U 2**

Clinical observation and participation involving planning for and administering radiation treatment of disease. Hackworth.  
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. Prereq: Enrollment in rad tech and permission of instructor. Not open to students with credit for 550.80. Repeatable to a maximum of 6 cr hrs.

**590 Introduction to Angiography U 2**

Introduction to the basic techniques employed in vascular and interventional procedures; emphasis placed on anatomical structures demonstrated, the equipment, and contrast agents used. Bruckner.  
Sp Qtr. 2 cl. Prereq: Enrollment in rad tech.

**595 Seminar U 1-3**

Conferences, group discussions, and presentations of selected topics.  
Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Enrollment in rad tech. Repeatable to a maximum of 9 cr hrs.

**615 Radiographic Clinical Correlations U P G 2**

Correlations of clinical experience relative to patient's medical history and quality and appropriateness of diagnostic images.  
Sp Qtr. 2 cl. Prereq: Enrollment in rad tech.

**665 Operation of a Medical Imaging Department U 3**

Methods of delivering radiological services including evaluation of equipment, personnel, budgeting, and the impact of federal equipment regulations. Ballinger.  
Sp Qtr. 3 cl. Prereq: Enrollment in rad tech. Not open to students with credit for 550.10.

**668 Quality Control in Diagnostic Medical Imaging U 3**

Examination of quality control methods utilized for radiographic CT and MRI imaging including management, implementation, and evaluation aspects. Finney.  
Wi Qtr. 3 cl. Prereq: 530 or permission of instructor. Not open to students with credit for 660.

**670 Radiobiology for the Radiologic Technologist U 2**

Fundamentals of radiobiological principles and radioprotective procedures, including cellular and whole body as it relates to radiologic technology. Finney.  
Sp Qtr. 2 cl. Prereq: Enrollment in rad tech.

**672 Radiologic Sectional Anatomy U 3**

Identification of anatomic structures as seen in cadaver cross-sections, emphasizing the correlation of anatomy and diagnostic computer generated patient images. Diesen.  
Su Qtr. 1 cl, 2 2-hr labs. Prereq: Enrollment in rad tech.

**687 Radiologic Technology Instruction U 2-6**

Planned professional teaching experience under supervision in a radiologic technology education program. Finney.  
Wi. Arr. Prereq: Hlth Edu 400 and permission of instructor, enrollment in rad tech or appropriate professional certification. Repeatable to a maximum of 12 cr hrs.

## Radiology

S209 Rhodes Hall, 410 West 10th Avenue, 293-8315

**670 Medical Radiation Physics U P G 2**

Ionizing radiations, their production, properties and interaction with materials of medical interest; physical principles of radiation therapy, radiation dosimetry, and radiation protection.  
Au, Sp Qtrs. 2 cl. Prereq: Permission of instructor.

**680 Radiation Biology U P G 2**

Effect of ionizing radiation in biological systems at the molecular, cellular, organ, organism, and community levels with special emphasis on medical implications and radiation safety.  
Wi Qtr. 2 cl. Prereq: Permission of instructor.

**740 Clinical Radiology P G 5**

Analysis of various radiographic examinations and the opportunity to make presentations.  
Su, Au, Wi, Sp, Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.  
A— Radiologic Diagnosis  
B— Radiation Therapy

**750 Radiologic Anatomy G 2**

Anatomy of specific regions or areas as it applies to the interpretation and understanding of diagnostic images.  
Sp Qtr. Arr. Prereq: Satisfactory completion of Med Coll 662, or Anatomy 712 and 713 or equiv and permission of instructor. Repeatable to a maximum of 8 cr hrs. Cross-listed with Anatomy 750.

**793 Individual Studies**

Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. These courses are graded S/U.

**793.02 General U P G 1-6****793.10 Radiation Biology U P G 3-6****813 Nuclear Magnetic Resonance Spectroscopy and Imaging G 3**

Basic principles of MRI/MRS, including basic MR physics, pulse sequences, adiabatic excitation, coil design, MR hardware, localized spectroscopy, saturation transfer, imaging, flow, and diffusion.

Wi Qtr. 3 1-hr cl. Prereq: Chem 521 or equiv, Biochem 511 or equiv, grad standing, and permission of instructor.

**830\* Molecular Basis of Mutagenesis and Carcinogenesis G 3**

Nature and mechanism of carcinogen-DNA interaction; cellular processing of genomic alterations and role of genotoxin-induced premutagenic/precarcinogenic lesions in neoplasia.

Sp Qtr. 2 cl Prereq: Biochem 613, 614, 615 sequence or MBiochem 827 or Pharmacy 677 or permission of instructor, and grad standing.

**850 Seminar G 1**

Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. These courses are graded I/b S/U.

**850.09 Radiation Oncology**

Selected topics of particular current interests in both research and applications of ionizing radiation in the treatment of cancer.

**850.10 Radiobiology**

Introduction to state of the art developments and innovations resulting from research directed at the study of cellular-molecular-environmental interactions.

Sp Qtr.

**850.20 Physics of Imaging**

Selected topics of current interests in research, development, and technology in medical physics as applied to medical imaging.

Au, Wi, Sp Qtrs.

**850.26 Physics of Radiation Therapy**

Selected topics of interest in research and developments of the methodology and technology of radiation treatment, planning, dosimetry, and equipment.

Au, Wi Qtrs.

**999 Research in Radiology G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Recreation Education

School of Health, Physical Education, and Recreation

246 Larkins Hall, 337 West 17th Avenue, 292-6538

**200 Social Recreation U 2**

Age characteristics and developmental levels relative to social activities; techniques, rules, strategy and social behaviors in a range of cultural activities, i.e., social games and pastimes.

2 cl. SS Admis Cond course.

**209 Orientation to Recreation and Leisure U 2**

Designed to enable the prospective major to understand basic concepts, philosophies, and scopes of the recreation and leisure services field, and to assess individual potential as a recreator.

2 cl, 1 lab.

**240 Recreation Leadership U 3**

Methods and materials for comprehensive programming with individuals and different groups in a variety of recreation settings.

2 1½-hr cl. Prereq: 209 or Phys Ed 209 or permission of instructor.

**270† Supervision of Playground and Community Recreation Activities U 2**

Programming of recreational activities relative to community conditions; overview of activities desirable for a broad, comprehensive program.

2 2-hr labs.

**271† Camp Counseling U 3**

Investigation of the responsibilities and duties of the counselor in various types of camps; practical experience in basic campcraft skills.

1 2-hr cl, 1 2-hr lab.

**289 Directed Field Experience U 2-5**

Professional service in community recreation and leisure service agencies. Designed for students in recreation education curriculum. Repeatable to a maximum of 20 cr hrs.

A— Initial

B— Community

**440 Recreation for Special Populations U 3**

Introduction to programs of recreation services for the aged, economically disadvantaged, youthful and adult offenders, and persons with physical or mental handicaps.

3 cl. Prereq: 5 cr hrs in biological sciences and Hlth Edu 200 or equiv. Open only to majors in recreation education.

**531 Social Issues and Concerns in Sport, Leisure, and Exercise Behavior U 5**

Examination of social and ethical issues such as discrimination, drug use, and the significance of the sport experience to individuals and sub-groups in the United States.

4 cl, 1 hr arr. Prereq: English 110 or 111 or equiv, second writing course, and jr or sr standing. Not open to students with credit for Phys Ed 531. Cross-listed in Physical Education. GEC/LAR course.

**540† Programming in Sport and Recreation U 3**

Examination of the development, organization, and implementation of programs and activities in sport, recreation, and leisure.

2 1½-hr cl. Prereq: 240.

**589 Practicum in Recreation U 6-15**

Opportunity to put professional theory and research into practice by leadership and supervisory experience in an agency setting.

Arr. Prereq: 289 or Phys Ed 289.06. Repeatable to a maximum of 15 cr hrs.

**600 Contemporary Issues in Sport and Leisure**

Studies of relevant contemporary issues and trends in sport and leisure.

**600.02 Sport and Social Values U G 2**

Selected value-laden issues current in the conduct of American sport such as the ethics of competition, equality and excellence, and the place of athletics in Education.

2 cl.

**600.03 Origin and Development of Leisure and Recreation U G 3**

Examination of the evolution of leisure and recreational pursuit as individual and cultural human activity.

2 1½-hr cl. Prereq: Sr or grad standing.

**692 Workshop U G 1-8**

Intensive study of a recreation education topic of interest to the participants for the purpose of developing sound principles and practices relating to it. Arr. Prereq: Practical experience in the field and permission of workshop director. Repeatable to a maximum of 12 cr hrs.

**693 Individual Studies in Recreation Education U G 1-4**

Investigation of selected professional problems.

Arr. Prereq: Sr or grad standing and permission of adviser. Repeatable to not more than 30 cr hrs for undergrads and 15 cr hrs for master's degree. This course is graded S/U.

**694 Group Studies in Recreation Education U G 1-5**

Group studies on special problems in recreation.

Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Cross-listed in Ed. Policy & Leadership, Educ-Studies, Ed. Theory & Practice, Ed Services & Research Educ., Health Education, and Physical Education, Res Educ.

**700.01 Seminar on Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual cases.

**700.02 Changing Societal Values U G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.

**700.03 Seminar on Ethical Issues Common to the Helping Professions U G 3**

Ethical issues of concern to the professions and arising out of advanced technology; euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility to the professions.

**700.04 Interprofessional Practicum in Clinical Settings U G 3, 5**

Interprofessional teamwork in clinical settings.

Prereq: Permission of instructor.

**700.05 Interprofessional Seminar in Policy Analysis U G 3**

Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.

3 cl. Prereq: Permission of instructor.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

**700.07 Interprofessional Approaches to Child Abuse and Neglect G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

1 2 1/2-hr cl. prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

**727 Special Topics in Education P G 1-5**

Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.

Prereq: Grad standing or registration in one of the professional schools. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**771 Organization and Administration of Public Recreation U G 3**

Consideration of common patterns of organization of community recreation found in American cities, large and small, under municipal, school, and other auspices. Wardwell.

2 1 1/2-hr cl. Prereq: 209 or permission of instructor. Sr standing or above.

**889 Internship in Recreation Education G 8-15**

Supervised internship for qualified graduate students in the area of Recreation Education.

3 cl, 20 or 40 hrs field experience. Prereq: Written permission of instructor and adviser. Students may not register for more than a total of 30 cr hrs under this number; subdivisions are not repeatable.

**889.01 Leisure Services for Special Populations**

Supervised internship in the area of leisure services for special populations.

**889.02 Coaching and Sport Leadership**

Supervised internship in the area of coaching and youth sports.

**889.03 Adult and Later Years**

Supervised internship in the area of recreation for adults and later years.

**889.04 Outdoor**

Supervised internship in the area of outdoor recreation.

**894 Group Studies G 3**

Advanced problems in recreation and leisure.

**996 Seminar in Recreation G 2**

1 2-hr cl. Repeatable to a maximum of 12 cr hrs.

## Religious Studies

308 Dulles Hall, 230 Wes: 17th Avenue, 292-2559

**270 Introduction to Comparative Religion U 5**

Introduction to the academic study of religion through comparison among major traditions (Judaism, Christianity, Islam, Hinduism, Buddhism, etc.) and smaller communities.

H270 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC LAR advanced English composition requirement. Not open to students with credit for Comp Std 270. Cross-listed in Comparative Studies in the Humanities. BER/GEC/LAR course.

**Philosophy of Religion**

See Philos 270.

**294 Group Studies U 3-5**

Groups of students are given an opportunity to pursue special studies not otherwise offered.

H294 (honors) may be available to students enrolled in an honors program or by permission of instructor. Repeatable to a maximum of 15 cr hrs.

**321 The Religions of India U 5**

History and structure of South Asian religions with attention to myth, ritual, art, philosophy, and social stratification.

5 cl. Prereq: 270; or Comp Std 102.01, 102.02, or 270 recommended.

**322 Native American Religions U 5**

Comparative survey of indigenous religions of North, Middle, and South America; and patterns and diversity in religious experience, cosmologies, myths, rituals, social organizations, and sacred roles.

5 cl. Prereq: 270 or Comp Std 102.01, 102.02, or 270 recommended.

**323 The Buddhist Tradition U 5**

History and structure of Buddhism from founding to present in South, Southeast, and East Asia; emphasis on rituals, beliefs, and local and regional variations.

5 cl. Prereq: 270; or Comp Std 102.01, 102.02, or 270 recommended. Not open to students with credit for EALL 323. Cross-listed in East Asian Languages and Literatures.

**324 African Religions U 5**

Survey of African traditional religions and their interaction with Islam and Christianity in Africa and the diaspora; emphasis on cosmologies, myth, ritual, ethics, and witchcraft.

5 cl. Prereq: 270; or Comp Std 102.01, 102.02, or 270 recommended.

**Sociology of Religion**

See Sociol 467.

**620 Approaches to the Study of Religion U G 5**

Survey and comparison of concepts, categories, theories, and methods used by various disciplines in the study of religion.

2 2-hr cl. Prereq: 270 or Comp Std 270 or English 280 or Hebrew 273 or History 270 or Philos 270 or grad standing or permission of instructor. 270 or Comp Std 270 or History 270 recommended. Not open to students with credit for 520.

**Special Topics in Cultural Anthropology: Anthropology of Religion**

See Anthro 620.11.

**641 The Japanese Religious Tradition U G 5**

A survey of the Japanese tradition, including Shinto, Buddhism, Taoism, New-Confucianism, and folk religion from the 6th century B.C.E. to the present.

2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for Japanese 641. Cross-listed in Japanese.

**651 Topics in Religious Studies U G 5**

Critical study of selected themes and topics in religious studies; emphasis on comparative study of myth, ritual, religious experience, praxis, history, art, etc.

2 2-hr cl. Prereq: 270 or Comp Std 270 or grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**History of Religions**

See History 653.

**693 Individual Studies U G 1-5**

Students may register for individual directed study in areas not covered in regular course work.

Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 3-5**

Groups of students are given an opportunity to pursue special studies not otherwise offered.

Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of reading arranged for each student, with individual conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing; a grade of A in at least half the major courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed. Open only to candidates *with distinction* in rel stds. Repeatable to a maximum of 10 cr hrs.

## Respiratory Therapy

School of Allied Medical Professions

431 School of Allied Medical Professions Building, 1583 Perry Street, 292-8445

**320 Components of Respiratory Health U 5**

Survey of normal respiratory mechanisms with specific consideration for the basis of respiratory therapeutics, the respirable environment and the role of the therapist.

Au Qtr. 5 cl. Prereq: Admission to the Resp Ther Division or permission of instructor.



**400 Therapeutics I U 6**

Study of theories, procedures, and equipment utilized in delivering, monitoring, and evaluating basic respiratory therapeutics to patients with compromised respiratory function in the hospital setting.

Au Qtr. 2 2-hr cl, 2 3-hr labs. Prereq: Admission to Resp Ther Division.

**410 Introduction to Clinical Respiratory Care U 4**

An introduction to basic cardiopulmonary assessment and life support techniques, infection control, the medical record, and the clinical environment.

Au Qtr. 1 2-hr cl, 1 3-hr lab, 1 3-hr clinical. Prereq: Admission to Resp Ther Division. Not open to students with credit for 489.01.

**420 Therapeutics II U 3**

Theories, procedures, equipment, standards, organizations, and legislation applicable to the delivery of respiratory therapeutics in non-hospital settings.

Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq 400.

**430 Pulmonary Function Testing U 3**

Study of theories, procedures, standards, and interpretations of pulmonary functions with consideration of mechanical and electronic principles of testing equipment.

Au Qtr. 1 2-hr cl, 1 3-hr lab. Prereq or concur: 320. Not open to students with credit for 460.

**450 Arterial Blood Gas Analysis U 3**

A study of the methods and procedures for obtaining arterial blood, the principles and standards of analysis, and application of the physiologic data.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 430. Not open to students with credit for 460.

**475 Mechanical Ventilation U 4**

Major emphasis is placed on all aspects of the management of the patient-ventilator system and artificial airways.

Wi Qtr. 2 2-hr cl. Prereq: 400, 410, 430; concur: 476. Not open to students with credit for 440 and 470.

**476 Mechanical Ventilators and Artificial Airways U 3**

Lectures, demonstrations, and laboratories on the various mechanical ventilators and artificial airways in use.

Wi Qtr. 1 2-hr cl, 1 3-hr lab. Prereq: 400, 410, 430; concur: 475

**480 Respiratory Disease U 2**

A study of the etiologies, manifestations, and treatment of respiratory diseases and their clinical courses.

Wi Qtr. 1 2-hr cl. Prereq: 320, 400, 430.

**489 Clinical Experience**

Su, Au, Wi, Sp Qtrs. 4-8 hr/wk. Prereq: Admission to the Resp Ther Division. Repeatable to a maximum of 20 cr hrs. These courses are graded S/U.

**489.02 Application of Therapeutics I U 1-4**

Clinical application and evaluation of basic respiratory therapeutics applied in hospital settings.

Wi, Sp Qtrs. 40 hrs arr for each cr hr. Prereq: 400. Repeatable to a maximum of 4 cr hrs.

**489.03 Application of Therapeutics II U 2**

Clinical application of respiratory care in non-hospital settings.

Su Qtr. 72 hrs arr. Prereq: 420.

**489.04 Adult Intensive Respiratory Care U 1-5**

Clinical application of continuous ventilatory management and cardiopulmonary monitoring.

Su, Au, Sp Qtrs. 40 hrs arr for each cr hr. Prereq: 475. Repeatable to a maximum of 5 cr hrs.

**489.05 Pulmonary Function I U 1**

Clinical application of various techniques and procedures involved in pulmonary function testing.

Wi Qtr. 40 hrs arr. Prereq: 430.

**489.06 Introduction to Clinical Pediatrics U 3**

Clinical application of basic neonatal and pediatric respiratory therapy.

Su Qtr. 120 hrs arr. Prereq: 500.

**489.07 Intubation and Airway Management U 1**

Clinical application of techniques and procedures involved with intubation and airway management.

Su Qtr. 40 hrs arr. Prereq: 475

**489.08 Pulmonary Rounds U 1**

Clinical observation and participation in the therapeutic decision-making process and case study presentations of patients receiving respiratory therapy.

Su Qtr. 40 hrs arr. Prereq: 515.

**489.10 Pulmonary Function II U 1**

Clinical application of various techniques and procedures involved in pulmonary function testing, emphasis on arterial blood gas analysis.

Sp Qtr. 40 hrs arr. Prereq: 450 and 489.05.

**500 Neonatal and Pediatric Respiratory Therapy U 5**

Neonatal and pediatric pulmonary pathophysiology with consideration of the necessary adaptations of equipment and therapeutics for application to the pediatric patient.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 475.

**515 Intensive Respiratory Care II U 5**

Etiology, manifestations, and treatment of respiratory failure, including principles, techniques, and equipment associated with advanced cardiopulmonary monitoring and cardiac life support.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 475 and 480. Not open to students with credit for 490 and 510.

**520 Administration of Respiratory Therapy Services U 3**

An analysis of management processes utilized by respiratory therapy services including organization, communication, quality assurance, audit, budget and regulatory processes, personnel management, and educational functions.

Wi Qtr. Prereq: Alli Med 630.

**589 Advanced Clinical Practice U 1-5**

Supervised clinical education and experiences in respiratory therapy education, administration of respiratory services, and areas of advanced professional practice.

Su, Au, Wi, Sp Qtrs. 8 hrs/wk, 1 cr hr. Prereq: Written permission of instructor and satisfactory completion of all respiratory therapy professional courses. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**593 Individual Studies in Respiratory Therapy U 1-5**

Guided study of topics or pursuit of individual experiences in respiratory therapy.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to the Respiratory Therapy Division or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**595 Seminar U 1-5**

Conferences, group discussions, and presentations of selected topics.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

**600 Fundamentals of Respiratory Care Research U G 3**

Survey of research problems, methods, and designs utilized in respiratory care, with emphasis on data presentation and analysis.

Au Qtr. 2 1½-hr cl. Prereq: Psych 220, or Stat 135 or 145 or equiv, and 4th yr or grad standing.

## Romance Linguistics

266 Cunz Hall, 1841 Millikin Road, 292-4958

Information concerning course frequency and quarters of offering, if not specified, may be available by contacting the department.

**811\* Romance Linguistics I G 5**

A general survey of the development of the Romance languages and an introduction to the basic materials and techniques of investigation.

2 2-hr cl. Prereq: Permission of instructor.

**812\* Romance Linguistics II G 5**

Topics and problems, both synchronic and diachronic; special attention to the minor Romance languages.

Wi Qtr. 2 2-hr cl. Prereq: 811 or permission of instructor.

**831\* Seminar in Romance Linguistics G 3-5**

Prereq: Permission of instructor.

**893 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-15**

Investigation of minor problems in the various fields of Romance linguistics. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**999 Research in Romance Linguistics G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Romanian

232 Cunz Hall, 1841 Millikin Road, 292-6733

### 101 Elementary Romanian U 5

Extensive practice in the basic language skills. Botoman.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR course. FL Admis Cond course.

### 102 Elementary Romanian U 5

The elements of Romanian grammar with oral and written exercises; development of conversational skill; reading, vocabulary building, attention to Romanian idioms. Botoman.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

### 104+ Intermediate Romanian U 5

Reading, oral and written practice, grammar review; balanced use of the four basic skills (reading, oral comprehension, speaking, and writing). Botoman.

Au Qtr. 5 cl. Prereq: 112 or equiv with permission of instructor. Not open to students with credit for 294 Au Qtr 1982; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course.

### 111 Intensive Intermediate Romanian U 5 or 10

An intensive course that combines the content of two quarters of Romanian to complete the presentation of the basic Romanian grammar and readings based on Romanian geography, history, and customs. Botoman.

Sp Qtr. 5 2-hr cl. Prereq: 102. Equiv to the third and fourth courses of the foreign language sequence; successful completion of 101-102-111 fulfills the Arts and Sciences foreign language requirement. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 or equiv will enroll for 5 cr hrs. GEC/LAR course.

### 112+ Intensive Romanian U 5, 10, 15

Elementary and intermediate Romanian for students desiring comprehensive knowledge of Romanian in the shortest possible time.

Su Qtr. 15 cl. Prereq: Permission of instructor. Not open to students with credit for 294 Su Qtr 1982. Full-time fees required regardless of number of cr hrs. Equiv to 101, 102, 103. Students may not register for any other course if they enroll in 112. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in Romanian will enroll for 15 cr hrs. Regardless of cr hrs enrolled, a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. GEC/LAR course. No audit. SS Admis Cond course.

### 235 Introduction to Romanian Culture U 5

Romanian literature in its cultural context, survey of the relationship of literature, art, cultural traditions from the beginnings to the present.

Wi Qtr. 5 cl. Not open to students with credit for 294 Wi Qtr 1981 or Wi Qtr 1983. Taught in English.

### 293 Individual Studies U 1-15

Individual studies in Romanian.

Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 294 Group Studies U 1-15

Group studies in Romanian language, literature, and culture.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs.

### 405 Conversation and Composition I U 5

Drill in everyday patterns of conversation and elementary practice in writing.

Au Qtr. 5 cl. Prereq: 104 or 111 or permission of instructor. Not open to students with credit for 293 taken Au Qtr 1982 or Wi Qtr 1983.

### 407 Conversation and Composition II U 5

Review of Romanian grammar; written compositions; perfection of pronunciation, translation practice, and expansion of vocabulary.

Wi Qtr. 5 cl. Prereq: 405 or permission of instructor. Not open to students with credit for 293 Au Qtr 1982 or Wi Qtr 1983.

### 697 Study at a Foreign Institution U G 1-15

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

## Rural Sociology

103 Agricultural Administration Building, 2120 Fyffe Road, 292-7911

### 105 Introduction to Rural Sociology U 5

Principles of society, major social institutions, and social change; emphasizes social changes in rural life, rural organizations, population, and family living. Lobao, Napier, Rakowski, and Thomas.

Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for Sociol 101 or 201. This course is available for EM credit. BER/GEC/LAR course. SS Admis Cond course.

### 378 Social Groups in Developing Societies U 5

Discussion of different life experiences, statuses, and behavior of people in major social groupings in developing societies.

Sp Qtr. 2 2-hr cl. Prereq: 5 cr hrs in rurl soc, sociol, or related social science; or permission of instructor. BER/GEC/LAR course.

### 489 Internship in Rural Sociology U 3-5

Supervised experience with an approved firm or organization; written comprehensive report required.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of major adviser. Repeatable to a maximum of 10 cr hrs. Open only to dept majors.

### 562 Diffusion of Information on Agricultural Technology U G 3

The process by which new ideas diffuse to farmers, homemakers, and peasants; emphasis on group influence, change agents, green revolution, and intermediate technology. Donnermeyer and Lobao.

Sp Qtr. 3 cl. Not open to students with credit for 421.

### 642\* Concepts and Theories in Rural Sociology U G 5

A comparative analysis of rural-urban social systems; analysis of the decline of rural-urban differences and the development of interdependency among rural-urban subsystems.

Sp Qtr. 2 2-hr cl. Prereq: 15 cr hrs in rur soc and/or sociol at the 300-level or higher. Not open to students with credit for 600.

### 666\* Rural Poverty U G 5

Evaluation of the factors which tend to create and perpetuate social and economic deprivation; the socio-economic conditions of poverty subgroups are analyzed in depth. Lobao.

Au Qtr. 2 2-hr cl. Prereq: 15 cr hrs in rur soc or related social science.

### 678+ Women in Rural Society U G 5

Women's role in rural society from a comparative perspective, focusing on agriculture, rural industry, and household activities, both in developing and developed countries. Lobao.

Sp Qtr. 2 2-hr cl. Prereq: 15 cr hrs in rur soc, sociol, or related social science, or permission of instructor.

### H683 Honors Project U 1-10

Conducting and reporting an honors project.

Su, Au, Wi, Sp Qtrs. Prereq: Agr Int H590.01, enrollment in Honors Program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, 693, or H693. This course is graded S/U.

### 688\* Social Impact Assessment of Domestic Development U G 5

Discussion of concepts and methods associated with social impact assessment of planned change programs; primary emphasis will be placed upon public development programs. Napier.

Au Qtr. 1 3-hr cl. Students will be required to use 2 hrs/week on a special class project. Prereq: 15 cr hrs in rur soc or sociology courses numbered 300 and above or related social sciences.

### 693 Individual Studies U G 2-5

Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 15 cr hrs in any or a combination of decimal subdivisions. These courses are graded S/U.

#### 693.01 Rural Social Problems

#### 693.02 Rural Formal Organizations

#### 693.03 Rural Sociology in Foreign Areas

#### 693.04 Research Methods in Rural Sociology

#### 693.05 Rural Community and Institutions

#### 693.06 Community Development

#### 693.07 Diffusion of Technology

#### 693.08 General Rural Sociology

### 694 Group Studies U G 2-5

An intensive study of a selected area in rural sociology appropriate to the needs of the group not provided in other courses.

Su, Au, Wi, Sp Qtrs. Prereq: permission of instructor. Repeatable to a maximum of 8 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 25 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**744\* Rural Sociology Demography U G 5**

Application of demographic principles to rural communities, rural institutions, and rural social problems with emphasis on population change and migration. Thomas

Au Qtr. 2 2-hr cl. Prereq: 15 cr hrs in rural soc or sociol or related social sciences. Not open to students with credit for 769.01.

**766\* Environmental Sociology U G 5**

Exploration of sociological approaches to the study of society and its physical environment and analysis of major issues relating to the survival base of human societies. Napier.

Au Qtr. 2 2-hr cl. Prereq: 15 cr hrs in rural soc and/or sociol at 400 level or above.

**788\* Sociological Theory Applied to Domestic Development U G 5**

Application of general sociological theories and development research findings to the analysis of domestic rural development; emphasis upon consensus and conflict models.

Sp Qtr. 1 3-hr cl. Prereq: 15 cr hrs in rural soc or sociol or related social science. Not open to students with credit for 796.06.

**792 Rural Sociology of Developing Societies U G 5**

Overview of sociological principles, theories, and practice applied to international development and social change in rural settings. Rakowski.

Wi Qtr. 2 2 1/2-hr cl. Prereq: 15 cr hrs in sociology, rural soci, related soci sci, or international studies courses; or permission of instructor. Not open to students with credit for 662.

**888 Social Action in Community Development G 5**

An analysis of the steps and conceptual areas in the social action process and its application to rural community development. Napier.

Sp Qtr. Arr.

**999 Research G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Russian

232 Cunz Hall, 1841 Millikin Road, 292-6733

**101 Elementary Russian I**

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Su, Au, Wi, Sp Qtrs. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**101.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs for 101.05.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**102 Elementary Russian II**

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Au, Wi, Sp Qtrs. 5 cl. Prereq: 101.01 or 5 cr hrs in 101.05 or 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 101.01 or 5 cr hrs of 101.05 or 101.51 or permission of instructor. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the quarter may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs for 102.05.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**103 Intermediate Russian I**

Readings, oral and written practice, grammar review. Students may select from among the following subdivisions which emphasize special areas.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

**103.01 Classroom Track U 5**

Au, Wi, Sp Qtrs. 5 cl. Prereq: 101.01 or 5 cr hrs in 102.05 or 102.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**103.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Grade of B- or above in 102.01 or 5 cr hrs of 102.05 or 102.51 or permission of instructor. Students may register for 102.51 and 103.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs for 103.05.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**104 Intermediate Russian II**

Readings, oral and written practice, grammar review.

Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

**104.01 Basic U 5**

Balanced use of the four basic skills: reading, oral comprehension, speaking, and writing; emphasis on Russian literary texts.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 103.01 or 5 cr hrs of 103.05 or 103.51. Not open to students with credit for 104. This course is available for EM credit.

**104.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 103.01 or 5 cr hrs of 103.05 or 103.51 or permission of instructor. Students may register for 103.51 and 104.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs for 104.05.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**111 Intensive Intermediate Russian U 5 or 10**

An intensive course combining the content of 103.01 and 104.01.

Sp Qtr. 5 2-hr cl. Prereq: 102. Not open to students with credit for 104 or 104 decimal subdivisions; or to native speakers of this language through regular course enrollment or EM credit. Equiv to third and fourth courses of the foreign language sequence; successful completion of 101-102-111 fulfills the Arts and Sciences foreign language requirement. Students with credit for 103, any hours of 103 decimal subdivisions, or 112 may not register for more than 5 cr hrs. GEC/LAR course.

**135 Introduction to Russian Culture U 5**

Russian literature in its cultural context, survey of the relationship of literature, art, music, and drama from the beginnings to the present.

Su, Au, Wi, Sp Qtrs. 4 cl, 1 hr arr. Taught in English. BER/GEC/LAR course.

**250 Masterpieces of Russian Literature in Translation U 5**

Reading and analysis of works by the great masters, Turgenev, Dostoevsky, and Tolstoy, and the Nobel Prize winners, Bunin, Sholokhov, Pasternak, and Solzhenitsyn.

Au Qtr. 5 cl. Not open to students with credit for 220 or 221. Taught in English. BER/GEC/LAR course.

**405 Russian Conversation and Composition**

Drill in everyday patterns of conversation and elementary practice in writing.

**405.01 Classroom Track U 5**

Au, Wi, Sp Qtrs. 5 cl. Prereq: 104 or permission of instructor. Not open to students with credit for 405; or to native speakers of this language through regular course enrollment or EM credit. Students must register for and complete 5 cr hrs during the qtr.

**405.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: 104.01 or 104.51 or permission of instructor. Not open to students with credit for 405 or 405.01; or to native speakers of this language through regular course enrollment or EM credit. Students may register for 104.51 and 405.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete five credit hours during the qtr may proceed to 407. Progress is sequential from one credit hour to the next, with proficiency at the level of 80% required for advancement.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**407 Intermediate Russian Conversation and Composition**

Review of Russian grammar; written compositions, perfection of pronunciation, translation practice, and expansion of vocabulary.

**407.01 Classroom Track U 5**

Au, Wi, Sp Qtrs. 5 cl. Prereq: 405.01 or 5 cr hrs of 405.51 or permission of instructor. Not open to students with credit for 407 or 407.01; or to native speakers of this language through regular course enrollment or EM credit. Students must register for and complete 5 cr hrs during the qtr.

**407.51 Individualized Track U 1-5**

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 405.01 or 5 cr hrs of 405.51 or permission of instructor. Not open to students with credit for 407 or 407.01; or to native speakers of this language through regular course enrollment or EM credit. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one credit hour to the next, with proficiency at the level of 80% required for advancement. Not open to students with credit for 407 or 407.01. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**511 Language Maintenance Course U 2**

Intended for the non-major and non-minor desiring to maintain an active knowledge of Russian without enrolling in advanced courses in grammar, literature or linguistics. Intermediate level conversation and non-literary popular readings.

2 cl. Prereq: 407, 407.01 or 407.51 or permission of instructor. Repeatable to a maximum of 12 hrs. Credit does not count for the major or minor. This course is graded S/U.

**512 Practical Russian Conversation U G 3**

Contemporary Soviet conversational patterns; preparation for program at the Pushkin Institute in Moscow.

Sp Qtr. 3 cl. Prereq: 30 hrs of Russian or permission of instructor. Not open to students with credit for 695, 698, 895, or 995. The instructor will be a visiting professor from the Pushkin Russian Language Institute in Moscow, Russia.

**514 Camp Horizon (Lager' Gorizont) U G 1**

A weekend total immersion Russian language camp; Russian only spoken; lectures, discussions, films, singing, dancing.

Sp Qtr. Friday 6 pm-Sunday 2 pm. Prereq: 560 or equiv, or permission of instructor. Repeatable to a maximum of 4 cr hrs, including cr hrs earned in 214. Travel and subsistence costs will be borne by the student. This course is graded S/U.

**520 Russian Literature in English Translation: From Pushkin to Turgenev U G 5**

An introduction to the Russian novel, drama, and poetry; major contributions of Pushkin, Lermontov, Gogol, Ostrovsky, Goncharov, and Turgenev.

Au Qtr. 4 cl. Not open to students with credit for 220.

**521 Russian Literature in English Translation: From Dostoevsky to Chekhov U G 5**

Reading and analysis of works by Dostoevsky, Tolstoy, Saltykov-Shchedrin, Turgenev, Chekhov.

Wi Qtr. 4 cl. Not open to students with credit for 221.

**522 Russian Literature in English Translation: 20th-Century Literature U G 5**

Survey of 20th-century Russian literature; readings on representative works by Bely, Sologub, Pasternak, Bulgakov, Navokov, Solzhenitsyn.

Sp Qtr. 4 cl. Not open to students with credit for 222.

**551+ Introduction to Russian Literature: Romanticism and Naturalism U G 3**

Readings from representative authors such as Pushkin, Lermontov, and Gogol.

Au Qtr. 3 cl. Prereq: 407 or equiv with written permission of instructor. Conducted in Russian.

**552+ Introduction to Russian Literature: The Russian Realists U G 3**

Readings from representative authors such as Turgenev, Dostoevsky, Tolstoy, and Goncharov.

Wi Qtr. 3 cl. Prereq: 407 or equiv with written permission of instructor. Conducted in Russian.

**553+ Introduction to Russian Literature: Impressionism, Symbolism, and Socialist Realism U G 3**

Reading from representative authors such as Chekhov, Gorky, Blok, Bunin, and Sholokhov.

Sp Qtr. 3 cl. Prereq: 407 or equiv with written permission of instructor. Conducted in Russian.

**560 Third-year Russian Language I U G 5**

Designed to improve the student's command of spoken and written Russian.

Au Qtr. 5 cl. Prereq: 407 or permission of instructor.

**561 Third-year Russian Language II U G 5**

Designed to improve the students command of spoken and written Russian.

Wi Qtr. 5 cl. Prereq: 560 or permission of instructor.

**571 Basic Russian for Graduate Students G 5**

Basic elements of Russian grammar.

5 cl. Prereq: Grad standing. Credit does not apply to the minimum hours required for the master's or doctoral degrees.

**572 Russian for Research I G 3**

3 cl. Prereq: Grade of C or above in 571 or equiv. Credit does not apply to the minimum hours required for the master's or doctoral degrees. Repeatable twice. Satisfactory completion of this course (grade A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement. No audit.

**573 Russian for Research II G 3**

Reading of difficult material at a reasonable rate of speed and with only infrequent use of dictionaries.

3 cl. Prereq: Grade of A or B in 572 or equiv preparation demonstrated by a placement test and permission of instructor. Open only to grad students. Repeatable to a maximum of 6 cr hrs. Completion of this course with a grade of A or B may be accepted by the student's dept as evidence of a thorough reading knowledge of Russian. Credit does not apply to minimum hrs required for the master's or PhD degree. No audit.

**580 Reading Russian I**

Readings from a variety of sources with special emphasis on contemporary materials.

Prereq: 407.01 or 5 cr hrs in 407.51 or 573. Not open to students with credit for 510.

**580.01 Classroom Track U G 3**

Sp Qtr. 3 cl.

**580.51 Individualized Track U G 1-3**

Strategies for reading Russian expository prose; skimming, scanning, reading for complete comprehension, and critical reading. Authentic texts from contemporary journalistic prose.

Su, Au, Wi, Sp Qtrs. Students may register for 407.51 and 580.51 concurrently. Students register for and complete from 1 to 3 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 581.51. Progress is sequential from one cr hr to the next, with a proficiency at the level of 80% required for advancement.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

**581 Reading Russian II****581.51 Individualized Track U G 1-3**

Continuation of 580; further development of strategies for reading Russian expository prose; authentic texts from contemporary journalistic prose.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 580.01 or 5 cr hrs in 580.51 or permission of instructor. Students register for and complete from 1 to 3 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.

**582 Reading Russian III****582.51 Individualized Track U G 1-3**

Continuation of 581.51; further development of strategies for reading Russian expository prose; authentic texts from contemporary journalistic prose.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 3 cr hrs of 581.51 or permission of instructor. Students register for and complete from 1 to 3 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 581.51 and 582.51 concurrently with permission of instructor.

**609 Advanced Reading, Conversation, and Composition I**  
**U G 4**

Reading of contemporary prose and verse, presentation of oral and written reports, drill in intonation patterns, translation from English into Russian.  
Au Qtr. 3 cl, 2 hr arr. Prereq: 561 or permission of instructor.

**610 Advanced Reading, Conversation, and Composition II**  
**U G 4**

Wi Qtr. 3 cl, 2 hr arr. Prereq: 609 or permission of instructor.

**611 Advanced Reading, Conversation, and Composition III**  
**U G 4**

Sp Qtr. 3 cl, 2 hr arr. Prereq: 610 or permission of instructor.

**613 Translation Techniques I U G 5**

Translation of material from the social sciences; discussion of techniques, procedures, methodology, and the art of translation. Ehlers.

Au Qtr. 5 cl. Prereq: 30 cr hrs in Russian. Not open to students with credit for 513.

**614 Translation Techniques II U G 5**

Continuation 613; work with progressively more difficult passages. Ehlers.

Wi Qtr. 5 cl. Prereq: 613 or equiv or permission of instructor. Not open to students with credit for 514.

**615 Translation Techniques III U G 5**

Translation of modern fiction; comparative and contrastive analysis of problems encountered in translating fiction and factual material. Ehlers.

Sp Qtr. 5 cl. Prereq: 614 or equiv or permission of instructor.

**616 Translation Laboratory U G 2**

Supervised translation of materials from current Soviet publications in the humanities and social sciences.

Au, Wi, Sp Qtrs. 2 cl. Prereq or concur: 613, 614, or 615; or equiv with written permission of instructor. Repeatable to a maximum of 6 cr hrs. Required of all majors in translation certificate program and translation track of the BA major in Slavic languages and literatures with specialization in Russian.

**631 Introduction to Russian Linguistics U G 3**

An introduction to linguistic concepts useful in the study of Russian; survey of major figures in Russian historical and descriptive linguistics.

Au Qtr. 3 cl. Prereq: 30 cr hrs in Russian.

**635\* Practical Russian Pronunciation U G 5**

Lectures and practical exercises, use of phonetic symbols, corrective exercises, and problems of teaching pronunciation.

Wi Qtr. 3 cl, 2 lab hrs. Prereq: 30 cr hrs in Russian.

**640 Introduction to the Structure of Russian U G 5**

Elements of Russian pronunciation and grammar with comparisons to English.

Wi Qtr. 3 cl. Prereq: 631.

**644\*\* Russian Folklore U G 5**

From the beginning to present; proverbs, the oral epic, historical songs, folktales, the folk theatre; analysis of the folklore component in modern Russian literature.

Sp Qtr. 3 cl. Not open to students with credit for 834. Taught in English.

**653\*\* Russian Drama U G 5**

Emphasis on the period from 1850 to present day; Ostrovsky, Chekhov, Gorky, Andreyev, Blok, and Soviet writers Leonov and Kataev. Kalbous.

3 cl. Prereq: 10 cr hrs in Russian or other literature courses at the 200 level or above. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list. Not open to students who have taken the departmental MA reading list.

**660 Basic Approaches to the Study of Russian Literature U G 3**

Historical overview of Russian literary criticism and theory; basic practical approaches to the study of literary texts.

3 cl. Prereq: Grad standing in dept or 25 hrs of Russian literature, or permission of instructor.

**661 The Poetics of Russian Verse U G 4**

Presentation of the basic distinctive features of Russian verse and a theoretical historical survey of the main trends and authors in Russian poetry.

3 cl. Prereq: 660 or permission of instructor.

**662 The Poetics of Russian Prose U G 4**

Stylistic, thematic, and structural study of Russian prose as a developing genre in the 19th and 20th centuries.

3 cl. Prereq: 660 or permission of instructor.

**664\*\* Studies in 20th-Century Russian Literature U G 5**

Offerings will include such topics as: the Serapion Brethren, literature and the revolution, prose of the 1920's emigre literature.

3 cl. Prereq: 10 cr hrs in Russian or other literature at the 200 level or above. Repeatable to a maximum of 20 cr hrs. Given in English; some original reading required of Slavic undergrad and grad majors.

**693 Individual Studies U G 2-10**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 30 cr hrs including cr hrs in 693.01 through 693.08 in any combination of decimal subdivisions. These courses are graded S/U.

**693.20 Literature****693.30 Linguistics****693.40 Language****693.50 Unspecified****694 Group Studies U G 2-10**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 15 cr hrs.

**695 Quarter or Semester at the Pushkin Russian Language Institute in Moscow I U G 5, 15, or 18**

Formal language instruction 30 hrs per week by faculty of the Institute; in Moscow only Russian will be spoken.

Au, Sp Qtrs. Prereq: Minimum of 30 cr hrs in Russian or equiv and permission of the chairperson. Repeatable to a maximum of 46 cr hrs including 895. Travel and subsistence costs for the institute will be borne by the student.

**723\* Topics in Russian Poetry U G 5**

Topics vary: the history of Russian poetry, versification theory; literary schools such as symbolism, formalism, or futurism; study of individual poets from any period.

3 cl. Prereq: 610 or permission of instructor. Repeatable to a maximum of 20 cr hrs. Conducted in Russian.

**750\*\* Pushkin and his Time G 5**

Analysis of Eugene Onegin as poetry and an encyclopedia of the times; social, political, and cultural trends in the 1820s and 1830s; romantic poets.

3 cl. Prereq: 10 hrs of Russian literature at the 200 level or above or permission of instructor. Not open to students with credit for 840.

**751\*\* Gogol' and 19th-Century Russian Satire U G 5**

Satire in the works of Nikolay Gogol', Nikolay Leskov, and Mikhail Saltykov-Shchedrin studied in the context of Russian literary and social development.

Prereq: 10 hrs in Russian or other literature in courses at the 200 level or above, or permission of instructor.

**752\*\* Turgenev, Chekhov, and Aspects of Russian Realism U G 5**

Study of Russian prose works outside of the satirical genre and others than the prose of Dostoevsky and Tolstoy.

Prereq: 10 hrs or Russian or other literature in courses at the 200 level or above, or permission of instructor.

**753\* Dostoevsky U G 5**

Critical analysis of the major novels and shorter works; intellectual and literary development of Dostoevsky.

3 cl. Prereq: 10 cr hrs in Russian or other literature courses at the 200 level or above. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list. Not open to students who have taken 650 within the last four years.

**754\*\* Tolstoy U G 5**

Analysis of all major works including the novels, plays, stories, and important polemical works.

3 cl. Prereq: 10 cr hrs in Russian or other literature courses at the 200 level or above. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list. Not open to students who have taken 651 within the last four years.

**801 College Teaching of Russian I G 3**

Methods and techniques for teaching Russian at the college level, selection and preparation of teaching and testing materials, the language laboratory, and other aids.

Au Qtr. 3 cl, 2 lab hrs. Prereq: 611 or equiv, or permission of instructor.

**820 History of the Russian Language G 3**

A survey of phonetic, morphological, and syntactical changes from the period of Common Slavic to the present; the formation of the Russian literary language.

Sp Qtr. 3 cl.

**823+\* Development of the Russian Literary Language G 5**

The formation of Russian as a literary language; the role of Church Slavonic elements in its formation and Western influences on Russian.

3 cl. Prereq: 820 or permission of instructor.

**826\* Topics in the Structure of Russian G 5**

Analysis and description of the structure of contemporary standard Russian.

Au Qtr. 3 cl. Prereq: 640 or equiv with written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**827\* Topics in the History of Russian G 5**

Development of Russian from Common Slavic to contemporary standard Russian with consideration of its place within East Slavic.

Au Qtr. 3 cl. Prereq: 820 or equiv with written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**829+\* Old Russian Literature: 15th-17th Century G 5**

Study of literary works of various genres cultivated in this period.

Wi Qtr. 3 cl. Prereq: 611 or 615.

**831\* Russian Literature, 1650-1800 G 5**

The baroque period, classicism, and sentimentalism; emphasis on the classical period of the 18th century.

Sp Qtr. 3 cl. Prereq: 2nd yr grad standing or permission of instructor.

**851 Seminar in Russian Literature, 1820-1917 G 3-5**

2 cl. Repeatable to a maximum of 15 cr hrs.

**852 Seminar in Russian Literature since 1917 G 3-5**

2 cl. Repeatable to a maximum of 15 cr hrs.

**895 Quarter or Semester at the Pushkin Russian Language Institute in Moscow II G 5, 15, or 18**

Formal language instruction 30 hrs per week by faculty of the Institute; in the USSR only Russian will be spoken.

Au, Sp Qtrs. Prereq: 695 or 698 or minimum of 50 cr hrs in Russian or equiv and permission of chairperson. Repeatable to a maximum of 46 cr hrs including 695 and 698. Travel and subsistence costs for the institute will be borne by the student.

**993 Individual Studies G 2-10**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions. These courses are graded S/U.

993.20 Literature

993.30 Linguistics

993.40 Language

993.50 Unspecified

**995 Pushkin Language Institute, Moscow G 18**

Ten month program in language, methodology, civilization, culture, contemporary Soviet literature.

Prereq: 695 or 698 or 895 or equiv and permission of chairperson. Must be a grad student in Russian at time of application. Instruction 30-36 hrs per week by Institute faculty; in Moscow only Russian will be spoken; students must enroll in all three decimal subdivisions. Travel and subsistence costs for the institute will be borne by the student.

995.01 Part 1

Au Qtr.

995.02 Part 2

Wi Qtr.

995.03 Part 3

Sp Qtr.

**Sanskrit**

222 Oxley Hall, 1712 Neil Avenue, 292-4052

See also Linguistics.

**621+\* Elementary Sanskrit U G 5**

Introduction to Indo-European, Indic, and Sanskrit; reading of introductory texts.

Au Qtr. 5 cl. Not open to students with credit for Linguist 621.

**622+\* Classical Sanskrit U G 5**

Reading of classical Sanskrit texts.

Wi Qtr. Prereq: 621 or permission of instructor. Not open to students with credit for Linguist 622.

**Scandinavian**

314 Cunz Hall, 1841 Millikin Road, 292-6985

**222 Nordic Mythology and Medieval Culture U 5**

The myths and gods of northern Europe and the culture which produced them within a modern social and psychological context.

Au Qtr. 5 cl. Taught in English. BER/GEC/LAR course.

**500\* Masterpieces of Scandinavian Literature U G 3**

Selected masterpieces of Scandinavian literature in European cultural context; from the sages through Ibsen and Strindberg to the present.

Wi Qtr. 3 cl. Taught in English. Repeatable to a maximum of 6 cr hrs.

**520\* The Films of Ingmar Bergman U G 5**

Major works of Sweden's foremost director; stress on film as a creative expression of the development of modern aesthetic and philosophical concerns.

Su Qtr. 2 cl, 1 3-hr cl. Taught in English. BER/GEC/LAR course.

**571+\* Reading the Scandinavian Languages U G 5**

Fundamentals of grammar of the Scandinavian languages for research purposes in the humanities, sciences, and social and behavioral sciences.

Wi Qtr. 5 cl.

**693 Individual Studies U G 2-5**

Investigation of problems in the various fields of Scandinavian literature and philology.

Au, Wi, Sp Qtrs. Arr. Prereq: Permission of chairperson. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation *with distinction*, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and cumulative pt-hr ratio commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**Sensory Biophysics**

105 Biological Sciences Building, 484 West 12th Avenue, 292-8772

**601 Introduction to Sensory Biophysics U G 5**

Anatomy and function of sensory systems; psychophysical research methods; mathematical descriptions of information transfer; biophysical models. Kornacker.

Wi Qtr. 5 cl. Prereq: Biology 101 or 113 or H115, Chem 122, Physics 112, and Math 117.

**Serbo-Croatian**

232 Cunz Hall, 1841 Millikin Road, 292-6733

**101 Elementary Serbo-Croatian I**

Not open to students with credit for 601, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR course. FL Admis Cond course.

**101.01 Classroom Track U 5**

Au Qtr. 5 cl.

**102 Elementary Serbo-Croatian II**

Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or 601 or permission of instructor. Not open to students with credit for 602; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

**102.01 Classroom Track U 5**

Wi Qtr. 5 cl.

**104 Intermediate Serbo-Croatian II**

Continuation of 103; development of the four skills.

Prereq: 103.01 or 5 cr hrs of 103.51 or 112 or equiv or permission of instructor. Not open to students with credit for 104 or 111; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course.

**104.01 Classroom Track U 5**

**111 Intensive Intermediate Serbo-Croatian U 5 or 10**

An intensive course that combines the content of 103 and 104; balanced use of the four skills: reading, oral comprehension, speaking, and writing. Intended for students who wish to expedite the completion of the language requirement.

Sp Qtr. 5 2-hr cl. Prereq: 102. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 or 112 may not register for more than 5 cr hrs but must complete the entire course. GEC/LAR course.

**300+ Modern Serbo-Croatian Literature U 5**

Reading and analysis of narrative prose of post-World War II Serbian and Croatian authors in English translation.

4 cl. Prereq: 10 cr hrs in literature courses at the 200 level or above, or permission of instructor. Given in English; some original reading required of students specializing in Srb-Croa.

**405 Conversation and Composition I****405.01\* Classroom Track U 5**

Reading texts of moderate difficulty, conversation, and simple compositions.

5 cl. Prereq: 104.01 or 5 cr hrs of 104.51 or 111 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

**405.51 Individualized Track U 1-5**

Reading texts of moderate difficulty, conversations, and simple compositions.

Prereq: 104.01 or 5 cr hrs of 104.51 or 111 or permission of instructor. Not open to students with credit for 605. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 104.51 and 405.51 concurrently with permission of instructor.

**407 Conversation and Composition II****407.01 Classroom Track U 5**

Reading from modern Serbo-Croatian literature, practice in writing and speaking.

5 cl. Prereq: 405.01 or 5 cr hrs of 405.01 or 605 or permission of instructor.

**407.51 Individualized Track U 1-5**

Reading from modern Serbo-Croatian literature; practice in writing and speaking.

Prereq: 405.01 or 5 cr hrs of 405.51 or 605 or permission of instructor. Not open to students with credit for 606. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

**580 Reading Serbo-Croatian I****580.51 Individualized Track U G 1-5**

Development of reading skills; short texts and headlines from contemporary popular journals and newspapers.

Arr. Prereq: 5 cr hrs of 407.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 407.51 and 580.51 concurrently with permission of instructor.

**581 Reading Serbo-Croatian II****581.51 Individualized Track U G 1-5**

Continuation of 580.51; reading of somewhat more difficult unedited texts from contemporary magazines and newspapers; reading for comprehension without a dictionary.

Arr. Prereq: 5 cr hrs of 580.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.

**620+ Serbo-Croatian Literature to the 1950s U G 5**

Historical and aesthetic development of oral and written Serbo-Croatian literature from the medieval period to the 1950s.

3 cl. Prereq: 10 cr hrs in any literature courses at the 200 level or above or permission of instructor. Given in English; some reading in original language required of undergrads specializing in Srb-Croa and grad students in Slavic.

**621+ Serbo-Croatian Literature 1950s to the Present U G 5**

Contemporary Serbo-Croatian literary works in English translation.

3 cl. Prereq: 10 cr hrs in literature courses at the 200 level or above, or permission of instructor. Given in English; some reading in the original language required of undergrads specializing in Srb-Croa and grad students in Slavic.

**693 Individual Studies U G 2-10**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of chairperson. Each decimal subdivision repeatable to a maximum of 20 cr hrs. These courses are graded S/U.

**693.20 Literature****693.30 Linguistics****693.40 Language****693.50 Unspecified****694 Group Studies U G 2-10**

Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 15 cr hrs.

**993 Individual Studies G 2-10**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of chairperson. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

## Slavic and East European Studies

322 Oxley Hall, 1712 Neil Avenue, 292-9660

**694 Group Studies U G 1-5**

Selected topics focusing on Slavs and East Europeans and the countries of Eastern Europe.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

## Slavic Languages and Literatures

232 Cunz Hall, 1841 Millikin Road, 292-6733

**130+ Slavic Languages and Cultures U 5**

History of the distribution of Slavic peoples; cultural impact of Slavic nations upon each other, their interaction with non-Slavic neighbors; language policies of Slavic nations.

Au Qtr. 4 cl. Taught in English. BER/GEC/LAR course.

**245 Introduction to Slavic Literature and Culture U 5**

Non-Russian Slavic literature in its cultural context; survey of the relationship of literature, art, music, and drama with emphasis on the late 19th century to the present.

Au Qtr. 5 cl. Taught in English. BER/GEC/LAR course.

**294 Group Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs including cr hrs earned in 294.01 through 294.09.

**519 Slavic Literature in English Translation from the Beginning to the Present U G 5**

Emphasis on masterpieces of non-Russian Slavic literatures; epic tradition, Kochanowski, Comenius, Obradovic, Mickiewicz, Shevchenko, Macha, Sienkiewicz, Reymont, Franko, Ukrainka, Vazov, Capek, and Hasek.

4 cl. Not open to students with credit for 219.

**671 Grammar of Selected Slavic Languages U G 5**

Fundamentals of grammar required for reading one of the following: Belorussian, Lusatian, Macedonian, Slovak or Slovenian; the language to be taught will change each year.

5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 25 cr hrs; individual languages not repeatable. Taught in English.

**672 Reading of Selected Slavic Languages U G 5**

Reading of elementary and intermediate texts and translation into English from one of the following: Belorussian, Lusatian, Macedonian, Slovak or Slovenian.

4 cl. Prereq: 671 (same language) or equiv. Repeatable to a maximum of 25 cr hrs; individual languages not repeatable. Taught in English.

**693 Individual Studies U G 2-10**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Each decimal subdivision repeatable to a maximum of 20 cr hrs. These courses are graded S/U.

**693.20 Literature****693.30 Linguistics****693.40 Languages****693.50 Unspecified****694 Group Studies U G 1-10**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 10 cr hrs including cr hrs earned in 694.01 through 694.11.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.



**699 Senior Tutorial and Essay U 5**

Individual study which leads to the writing of an essay that will integrate the experience of earlier courses in Slavic.

Au, Wi, Sp Qtrs. Open only to sr majors in Slavic languages.

**H783 Honors Research U 3-5**

Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a grade of A in at least half of the Slavic courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**800 Bibliography G 1**

Required of all candidates for graduate degrees; acquaints grad students with bibliographical sources essential for research in Slavic and East European literature, linguistics, and pedagogy.

Au Qtr. 6 2-hr cl. Not open to students with credit for 880.

**810 Old Church Slavonic G 5**

Study of the earliest Slavic language; reading and linguistic interpretation of original documents.

Au Qtr. 5 cl. Not open to students with credit for Russian 810.

**812\* Readings in Church Slavonic Texts G 5**

Reading and analysis of Church Slavonic texts of the later period.

3 cl. Prereq: 810 or permission of instructor. Not open to students with credit for Russian 812.

**860 An Introduction to the Slavic Languages G 3**

A general survey of all the Slavic languages and their common features.

3 cl.

**861\* History of the South Slavic Languages G 5**

Bulgarian, Macedonian, Serbo-Croatian, and Slovenian, with emphasis on Serbo-Croatian and its relation to the other South Slavic languages.

3 cl. Prereq: Good command of Russian and acquaintance with a second Slavic language or permission of instructor.

**862\* History of the West Slavic Languages G 5**

Polish, Czech, Slovak, Polabian, Kashubian, and Lusatian, with special emphasis on Polish and its relation to the other West Slavic languages.

3 cl. Prereq: Good command of Russian, and acquaintance with a second Slavic language or permission of instructor.

**864\* Comparative Slavic Grammar G 5**

Development of Indo-European phonology and morphology into Common Slavic and the development in contemporary Slavic languages.

3 cl. Prereq: 860 or permission of instructor.

**870 Seminar in Slavic Philology G 3-5**

Historical and comparative studies in the Slavic languages and related language families, including Baltic and Finno-Ugric.

2 cl. Repeatable to a maximum of 20 cr hrs.

**871 Seminar in Slavic Linguistics G 3-5**

Descriptive and transformational studies in Russian and other Slavic languages.

2 cl. Repeatable to a maximum of 20 cr hrs.

**993 Individual Studies G 2-10**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions including cr hrs in 993.01 through 993.11. These courses are graded S/U.

**993.20 Literature****993.30 Linguistics****993.50 Unspecified****999 Research in Slavic G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Social and Behavioral Sciences, College of

1010 Derby Hall, 154 North Oval Mall, 292-8448

**294 Group Studies U 1-5**

Interdisciplinary studies in the social and behavioral areas.

Repeatable to a maximum of 15 cr hrs.

**694 Group Studies U G 1-5**

Interdisciplinary studies in the social and behavioral areas.

Repeatable to a maximum of 15 cr hrs.

## Social Work

300 Stillman Hall, 1947 College Road, 292-6288

**230 Individual Needs and Societal Responses U 5**

Introductory understanding of human needs, social values, ideologies, and institutional structures which have shaped the evaluation of social welfare programs in America.

Au, Wi, Sp Qtrs. 2 1½-hr cl, 2 1-hr labs. Not open to students with credit for 220. BER/GEC/LAR course.

**300 Minority Perspectives: Race, Ethnicity, and Gender U 5**

Examination of the structure of human societies, cultures, and institutions, and the allocation of resources from the vantage point of oppressed minority populations.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 10 cr hrs of course work in polit sc, psych, or sociol. Not open to students with credit for 600. GEC course.

**367 Second Writing Course****367.01 Pathways to Poverty in an Age of Technology U 5**

Examination of the consequences of underclass status associated with technological change; emphasis on development of writing and oral skills in considering social issues.

Au Qtr. 2 1½-hr cl; 1 2-hr rec. Prereq: English 110 or 111 or equiv, and soph standing. GEC/LAR course.

**494 Group Studies U 2-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered in social work.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 10 cr hrs.

**503 Juvenile Delinquency: Origins and Social Control U 5**

Examination of juvenile delinquency as a social problem with emphasis on its history, policy initiatives, and treatment.

Wi Qtr. 2 2½-hr cl. Prereq: Jr standing; 15 cr in social sciences. GEC Capstone 1.

**509† Legal Aspects of Social Work U G 3**

Law as a means of social control; study of case, statute, and constitutional law most frequently involved in social work practice; legal aid.

Sp Qtr. 2 1½-hr cl. Prereq: 3rd or 4th yr standing or permission of instructor.

**520 Problems, Policies, and Programs in Social Welfare I U 3**

An introduction to historical backgrounds and the utilization of an analytical framework in the study of the American social welfare system.

Au Qtr. 2 1½-hr cl. Prereq: Soc work major; nonmajors with permission only. H520 (honors) may be available to students enrolled in an honors program or by permission of instructor.

**521 Problems, Policies, and Programs in Social Welfare II U 3**

Application of an analytical framework to the study of current issues and problems of policies, programs and social welfare services in the perspective of the American welfare system.

Wi Qtr. 2 1½-hr cl. Prereq: 520.

**533 Determinants of Social Functioning I U 3**

Study of life cycle, growth, and development from birth through adolescence from bio-psycho-social perspective; selected theories of personality discussed in relationship to growth and development.

Au Qtr. 2 1½-hr cl. H533 (honors) may be available to students enrolled in the Social Work honors program, or by permission of instructor. Prereq: Jr. standing in soc work.

**534 Determinants of Social Functioning II U 3**

Study of life cycle from young adulthood through old age including dying and death; discussion of influences on social functioning of group relationships, organizations, and institutions.

Wi Qtr. 2 1½-hr cl. Prereq: 533.

**570 Quantitative Analyses of Social Data U 5**

Examination of social welfare data with a focus on data analysis; review of descriptive and inferential methods with a primary emphasis on interpretation and computer applications.

Au Qtr. 2 2-hr cl, 1-hr lab arr. Prereq: 230 and Math 104 or equiv. GEC course.

**571 Introduction to Research Methods In Social Work U 4**

Science and society; research design; measuring variables; data collection, processing, and analysis.

Wi Qtr. 2 2-hr cl. H571 (honors) may be available to students enrolled in the Social Work honors program, or by permission of instructor.

**576 Critical Assessment of Social Research U 5**

Development of practical skills in critical and analytic writing in weighing competing ideas both in writing and oral forms.

Sp Qtr. 2 2½-hr cl. Prereq: 571 or equiv, English 110 or 111, second writing course, and Jr or sr standing. GEC/LAR course.

**593 Individual Studies U 1-5**

Individual study projects on problems and services in selected areas of social welfare; report required.

Su, Au, Wi, Sp Qtrs. Prereq: 10 cr hrs in soc work or related courses, approval of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**595 Integrative Seminar U 3**

Lectures and discussions designed to apply core curriculum content to areas of contemporary concern to social workers; focus on the development of assessment skills.

Sp Qtr. 2 1½-hr cl. Prereq: 521, 534, 571; nonmajors by permission only.

**597 Adolescent Parenthood and Sexuality: International Perspectives U 5**

Examination of origins of adolescent sexual problems in milieus that develop different value systems; public policies and social programs designed to control adolescent sexuality and parenthood.

Au Qtr. 2 2½-hr cl. Prereq: Sr standing; and 15 cr hrs of course work in social science in individual development, adolescence, the family, culture, and social change. GEC/LAR course.

**644 Social Work Practice Lab U 3**

Introduction to practice-relevant communication, interactional group skills; extensive use of discussion-participation, role-play, and demonstration with help of audio-visual media.

Sp Qtr. 2 1½-hr cl. Concur: 645. Open only to social work majors.

**645 Social Work Practice I U 4**

Foundation professional values, practice knowledge and change-oriented action within a generalist ecological perspective for working with people at various levels of human systems.

Sp Qtr. 2 2-hr cl. Prereq: Jr standing and concur 644.

**646 Social Work Practice II U 3**

Values, knowledge, and skills of generalist social work practice with individuals and families by using an ecological problem-solving model.

Au Qtr. 2 1½-hr cl. Prereq: 644 and 645; soc work majors only.

**647 Social Work Practice III U 3**

Generalist-ecological framework with professional values, knowledge, and skills essential to effective intervention with small groups and community groups.

Wi Qtr. 2 1½-hr cl. Prereq: 646. Open only to soc work majors.

**689 Field Practice U 1-18**

Placement in a social welfare organization used by the college as a teaching center; student expected to assume a service provision role in a progressively responsible manner.

Au, Wi, Sp Qtrs. Social agency assignments. Prereq: 644, 645, and permission of program coordinator. Repeatable to a maximum of 18 cr hrs.

**694 Group Studies U G 1-5**

Selected topics.

Su, Au, Wi, Sp Qtrs. Arr.

**695 Integrative Seminars U G 3**

Examines the various fields of social work practice; focuses on developing the ability to set practice goals, decide methods of intervention, implement, and evaluate consequences.

Su, Au, Wi, Sp Qtrs. 1 3-hr cl.

**695.09 Alcoholism****695.10 Women's Issues****695.12 Child and Family Services**

Not open to students with credit for 640.01. May be taken to fulfill social work elective cr hrs.

**695.13 Corrections**

Not open to students with credit for 640.02. May be taken to fulfill social work elective cr hrs.

**695.14 Aging**

Not open to students with credit for 640.03. May be taken to fulfill social work elective cr hrs.

**695.15 Mental Retardation and Developmental Disabilities**

Not open to students with credit for 640.04. May be taken to fulfill social work elective cr hrs.

**695.16 Physical Health Care**

Not open to students with credit for 640.05. May be taken to fulfill social work elective cr hrs.

**H696 Thesis Seminar U G 3**

Direction will be provided to facilitate honors students and MSW students at designing a thesis proposal.

Sp Qtr. 1 2½-hr cl. Prereq: H521, H533, H571, or MSW major. Not open to students with credit for H694. Open only to soc work majors.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****H699 Honors Research U 3-12**

Research for Honors Thesis purposes only.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the soc work courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the social Work Honors committee. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**700 Interprofessional Education**

Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.

3-hr cl. Repeatable to a maximum of 9 cr hrs. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology.

**700.01 Seminar on Interprofessional Care U G 3**

Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.

Wi, Sp Qtrs.

**700.02 Changing Societal Values U G 3**

Identification and clarification of values considerations as they relate to professional problems in dealing with consumer/clients/patients.

Sp Qtr.

**700.03 Ethical Issues U G 3**

Ethical issues of concern to the professions and arising out of the advanced technology: euthanasia, mind control, malpractice, and social responsibility of the professions.

Au Qtr.

**700.05 Interprofessional Seminar in Policy Analysis U G 3**

Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**700.06 Care of Chemically Dependent Families U G 3**

Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.

Wi Qtr. Prereq: Permission of instructor.

**700.07 Interprofessional Approaches to Child Abuse and Neglect G 3**

Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.

Au Qtr. 1 2½-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

**703 Seminars in Social Welfare Policy and Program Analysis P G 3**

Au, Wi, Sp Qtrs. 1 2½-hr cl. Prereq: 721 or equiv and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

D— Law and Social Work

E— International Social Welfare

G— School

**710 Women's Issues in Social Work P G 3**

Examination of relevant issues in the professional practice of social work.

Su, Sp Qtrs. 1 2½-hr cl.

**711 Race and Ethnicity in Social Work Practice P G 3**

An analytical approach to problems, needs, and intervention for effective social work practice with the oppressed target populations of Appalachians and Blacks.

Su, Sp Qtrs. 1 2½-hr cl. Prereq: Grad standing.

**712 Social Welfare and the Jewish Community P G 3**

A study of the historical, cultural, and religious antecedents for the development of the current organization of Jewish Communal Services in the United States.

Sp Qtr. 1 2½-hr cl. Prereq: Grad standing.

**713 Social Work Practice in the Schools G 3**

Examination of major issues in American schools, theoretical framework for social work services, delivery of services, models of school social work intervention, and intervention strategies.

Wi Qtr. 1 2½-hr cl. Prereq: Grad standing or permission of instructor.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Educational Services & Research, Family Relations and Human Development, Human Nutrition and Food Management, Nursing, Psychology, Physical Education, and Speech and Hearing Science.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.

Wi Qtr. 1 3-hr cl. Not open to students with credit in 717.01 in any cross-listed areas.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su Qtr. 1 2-hr cl. Not open to students with credit in 717.02 in any cross-listed areas.

**720 Social Welfare Policies and Programs I P G 3**

Historical and comparative analysis of social welfare systems; their relationship to change in the basic social institutions: family, church, government, and economic institutions.

Au Qtr. 1 2½-hr cl. Prereq: Soc work grad standing or permission of instructor.

**721 Social Welfare Policies and Programs II P G 3**

The development and application of a conceptual model for social welfare policy and program analysis.

Wi Qtr. 1 2½-hr cl. Prereq: 720.

**730 Seminars in Social Functioning P G 3-5**

Presentation and critical examination of personality, interactional, small group, and organizational and community concepts and approaches used in analyzing social dysfunction.

Su, Sp Qtrs. 1 2½-hr cl. Prereq: Soc work grad standing.

A— Institutional and Organizational Behavior

B— Psychopathology and Deviance

**733 Human Behavior and the Social Environment I P G 3**

Introductory course covering theories and concepts related to individuals and families as they develop over the life span; systems model provides a unifying framework.

Au Qtr. 1 2½-hr cl. Prereq: Soc work grad standing or permission of instructor.

**734 Human Behavior and the Social Environment II P G 3**

Continues applying the systems and life span frameworks to extra-familial environments (i.e., groups, communities, and cultures) that effect individual development and social functioning.

Wi Qtr. 1 2½-hr cl. Prereq: 733.

**735 Human Behavior and the Social Environment III P G 3**

Su, Au, Wi, Sp Qtrs. 1 2½-hr cl. Prereq: Grad standing.

**741 Clinical Practice**

Theory and methods of clinical social work practice with individuals, families, and groups; social work philosophy and values in the study of assessment, evaluation, and methods of intervention.

**741.01 Introduction P G 3**

Su, Sp Qtrs. 1 2½-hr cl. Prereq: 746.

**741.02 Individuals P G 3**

Su, Au Qtrs. 1 2½-hr cl. Prereq: 741.01.

**741.03 Conjoint Marital and Family Therapy P G 3**

Wi Qtr. 1 2½-hr cl. Prereq: 741.01.

**741.04 Crisis Intervention P G 3**

Sp Qtr. 1 2½-hr cl. Prereq: 741.01.

**741.05 Groups P G 3**

Au Qtr. 1 2½-hr cl. Prereq: 741.01.

**741.09 Special Topics P G 2-5**

Au, Wi, Sp, Su Qtrs. Arr. Repeatable to a maximum of 20 cr hrs.

**742 Administrative Aspects of Practice in Human Services Organizations**

Examines generic functions and processes of administration in relation to a conceptual framework for the management of human services professionals, based in a social work value orientation; application to public and voluntary social welfare/human services organizations.

**742.01 Introduction P G 3**

Su, Sp Qtrs. 1 2½-hr cl. Prereq: 746.

**742.02 Staffing P G 3**

Au Qtr. 1 2½-hr cl. Prereq: 742.01.

**742.04 Administrative Aspects of Practice in Human Services Organizations: Social Welfare Planning Methods P G 3**

Wi Qtr. 1 2½-hr cl. Prereq: 742.01. Not open to students with credit for 743.07.

**742.05 Financial Management P G 3**

Wi Qtr. 1 2½-hr cl. Prereq: 742.01.

**742.06 Management Information Systems P G 3**

Sp Qtr. 1 2½-hr cl. Prereq: 742.01.

**742.09 Special Topics P G 2-5**

Au, Wi, Sp Qtrs. Arr. Prereq: 744 and 745. Repeatable to a maximum of 20 cr hrs.

**742.10 Supervision P G 3**

Sp Qtr. 1 2½-hr cl. Prereq: 730A.

**743 Social Planning Aspects of Practice**

Concepts and strategies involved in the design, planning, implementation, monitoring, and evaluation of social delivery.

**743.03 Neighborhood and Community Development P G 3**

Sp Qtr. 1 2½-hr cl. Prereq: 746.

**743.06 Theories of Social Welfare Planning P G 3**

Historical and current views of planning are examined for their value in understanding social welfare planning theory; the roles of government and private forces are examined for their respective contributions to the development of contemporary social planning theory.

Au Qtr. 1 2½-hr cl. Prereq: 743.03. Not open to students with credit for 743.04.

**744 Social Work Practice Lab P G 2**

Experiential learning to complement the theoretical constructs studied in 745.

Au Qtr. 1 3-hr cl. Prereq: Soc work grad standing; concur 745.

**745 Practice and Profession I P G 3**

Emerging development of social work, its fundamental goals, knowledge, values, ethics, and interventive approaches focusing primarily on micro- and mezzo-ecosystems and a beginning conceptual framework for practice.

Au Qtr. 1 2½-hr cl. Prereq: Soc work grad standing; concur 744.

**746 Practice and Profession II P G 3**

Continued examination of key elements of social work focusing primarily on mezzo- and macro-ecosystem approaches, and concluding with an integrated framework for social work practice.

Wi Qtr. 1 2½-hr cl. Prereq: 744 and 745. Open only to SWK majors.

**750 Social Welfare Policies and Programs P G 3**

Unique and specific aspects of social welfare policies and programs in selected fields of Social Work which augment Clinical and Social Planning/Administration concentrations.

Au, Wi Qtrs. 1 2½-hr cl. Prereq: 721. Students may not register for more than a total of 9 cr hrs under this number; subdivisions not repeatable.

**750.01 Child and Family Services**

Understanding and application of the analytic model of social welfare policies and programs with special emphasis on the disadvantaged as applied to child and family social work practice.

**750.02 Aging**

Examination of social welfare policies affecting the elderly; identification of current and future issues and comparison of international, federal, state, and local programs.

**750.03 Health**

Analysis of social and economic policies and political forces which influence the delivery of health services and the role of social workers in health care.

**750.04 Mental Health**

Utilizing a social policy analytic framework; introduces social welfare policy issues and program organization.

**750.05 Mental Retardation and Developmental Disabilities**

Focuses on analysis of problems, policies, and programs which affect practice with the MR/DD population and their families.

**751 Social Work Practice P G 3**

Unique and specific aspects of social work practice in related fields and social work which augment clinical and social planning/administration concentrations.

Au, Wi, Sp Qtrs. 1 2½-hr cl. Prereq: 746. Students may not register for more than a total of 9 cr hrs under this number; subdivisions are not repeatable.

**751.01 Child and Family Services**

Develops advanced skills in dealing with problems of children and their families to assure protection and permanency through direct and indirect social work intervention.

**751.02 Aging**

Theoretical perspectives relevant to the aging process are examined; review of special concerns and treatment modalities unique to adults in middle and later years.

**751.03 Health**

Knowledge and skills for specialized social work practice in health; clinical, planning, and administrative roles in several subspecialties are addressed.

**751.04 Mental Health**

Provides knowledge and skills in clinical, and planning/administrative modes of practice in a range of mental health settings with selected target populations.

**751.05 Mental Retardation and Developmental Disabilities**

Provides advanced knowledge and skills of multiple social work roles in working with MR/DD clients and their families.

**770 Research Methods in Social Work P G 3**

Basic research methodology; the role of research in social work.

Su, Au Qtrs. 1 2½-hr cl. Prereq: Soc work grad standing or permission of instructor.

**771 Data Analysis Designs P G 3**

Interpretation of social work data; quantitative techniques; designs of data analysis.

Su, Wi Qtrs. 1 2½-hr cl. Prereq: Soc work grad standing or permission of instructor.

**775 Methods and Techniques in Social Work Research**

The study of methodological issues in social work research; focus on the various phases of research process.

1 2½-hr cl. Prereq: 770.

**775.01 Needs Assessment in the Human Services P G 3**

Su, Sp Qtrs.

**775.02 Data Processing Methods P G 3**

Au Qtr.

**775.09 Special Topics P G 2-5**

Arr. Repeatable to a maximum of 20 cr hrs.

**789 Field Practicum I P G 1-15**

Integration of field practice with social work practice theory.

Su, Au, Wi, Sp Qtrs. Prereq: 744 and 745. Placement in assigned human service organization 2 days wkly. Normally scheduled Wi and Sp Qtrs. Arr with student's faculty adviser. Open only to SWK majors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**793 Individual Studies P G 1-5**

Directed readings and tutorials related to specific problems.

Su, Au, Wi, Sp Qtrs. Prereq: Soc work grad standing, permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**794 Group Studies P G 1-4**

Group seminars in specialized areas of curriculum.

Su, Au, Wi, Sp Qtrs. Prereq: Soc work grad standing, permission of instructor. Repeatable to a maximum of 15 cr hrs.

**875 Seminars on the Application of Evaluation Designs to Social Work Research**

Application of experimental design to the evaluation of outcomes in social work practice; focus on types of design, collection, analysis, and interpretation of data for agency decision-making; practicum and/or evaluation proposals required.

**875.01 Single Case Design G 3**

Su, Sp Qtrs. 1 2½-hr cl. Prereq: 770.

**875.03 Program Evaluation G 3**

Au Qtr. 1 2½-hr cl. Prereq: 770.

**889 Field Practicum II P G 1-15**

Designed to permit students to achieve greater autonomy and to maximize skill development in the integration of social work theory and practice.

Placement 3 days wkly Au, Wi, Sp Qtrs in a human service organization in accordance with student's primary mode of intervention. Prereq: 789. Repeatable to a maximum of 21 cr hrs. This course is graded S/U.

**894 Group Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: MSW or equiv with written permission of instructor. Repeatable to a maximum of 20 cr hrs, not more than 10 of which shall be in any one of the following areas.

- A— Social Work Practice
- B— Social Welfare Policy
- C— Dynamics of Social Functioning
- D— Other

**900 Theory Building**

Theory construction, elements of theory, knowledge-building, and general epistemological issues related to social work and social science theory on micro and macro levels.

Au, Wi Qtrs. Repeatable to a maximum of 9 cr hrs.

**900.01 Knowledge-Building in Social Science and Social Work Theory G 3**

Au Qtr. 1 3-hr cl. Prereq: PhD standing.

**900.02 Micro Theory: Theories of Individual Functioning G 3**

Wi Qtr. 1 3-hr cl. Prereq: 900.01.

**900.03 Macro Theory: Social Theory and Social Welfare G 3**

Wi Qtr. 1 3-hr cl. Prereq: 900.01.

**901 Social Work Research**

Quantitatively-oriented research methods, qualitatively-oriented research methods, computer literacy, and data processing skills.

Au Qtr. Repeatable to a maximum of 9 cr hrs.

**901.01 Quantitative Research Methods in Social Work G 3**

Au Qtr. 1 3-hr cl.

**901.02 Qualitative Research in Social Work G 3**

Au Qtr. 1 3-hr cl.

**901.03 Computer Literacy in Social Work G 3**

Sp Qtr. 1 3-hr cl. Prereq: 901.01; grad level stat course.

**902 Social Work Practice Theory**

Advanced courses in social work practice such as clinical practice administration and policy courses on social change, international social welfare, and social work education.

Au, Sp Qtrs. Prereq: PhD standing. Repeatable to a maximum of 25 cr hrs.

**902.01 Advanced Practice in Clinical Social Work G 5**

Au, Sp Qtrs. 1 5-hr cl.

**902.02 Advanced Practice in Social Work Policy and Administration G 5**

Au, Sp Qtrs. 1 5-hr cl.

**902.03 Current Issues in Social Work Education G 5**

Sp Qtr. 1 5-hr cl.

**903 Proposal Development G 3**

Designed to help develop the dissertation proposal; present ideas, receive feedback, and defend proposal to students and faculty in an open forum.

Wi Qtr. 1 3-hr cl. Prereq: 2nd yr PhD standing.

**993 Individual Studies G 1-5**

Directed readings and tutorials related to specific problems and issues in following areas:

- A— Social Work Practice
- B— Social Welfare Policy
- C— Dynamics of Social Functioning
- D— Social Work Research
- E— Social Work Education
- F— Other

Su, Au, Wi, Sp Qtrs. Prereq: MSW or permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**998 Research in Social Work: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Social Work: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Sociology

300 Bricker Hall, 190 North Oval Mall, 292-6681

**101 Introductory Sociology U 5**

Fundamental concepts of sociology and an introduction to the analysis of social problems.

Su, Au, Wi, Sp Qtrs. H101 (honors) may be available to students enrolled in an honors program. Not open to students with credit for 201 or equiv or Rurl Soc 105 or equiv. BER/GEC/LAR course. SS Admis Cond course.

**202 Social Problems U 5**

Analysis of contemporary social problems.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 5 cr hrs in sociol. BER/LAC/LAR course. SS Admis Cond course.

**209 Introduction to Criminal Justice U 5**

Examination of the development and administration of criminal law and agencies (police, prosecutors, courts); emphasis on criminal proceedings and their justification. Peterson and Scott.

Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for Criminol 209. SS Admis Cond course.

**210 Sociological Aspects of Deviance U 5**

Study of the definition, identification, treatment, and control of types of legal, moral and status deviance, such as crime, mental illness, alcoholism and other individual pathologies.

Au, Wi, Sp Qtrs. Not open to students with credit for Criminol 210. BER/GEC/LAR course. SS Admis Cond course.

**294 Group Studies U 3-5**

Topics vary each quarter offered.

Au Qtr. Prereq: 101. Repeatable to a maximum of 10 cr hrs.

**298 Study Tour U 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**298.01 Domestic****298.02 Foreign****302+ Technology and Global Society U 5**

Social aspects of technology, social change, and technological development; underdevelopment and the global economy.

**306+ Sociology of Poverty U 5**

A study of low-income peoples, especially concerning the effect of poverty on them, and their consequent social participation.

Not open to students with credit for 206. BER/GEC course. SS Admis Cond course.

**320 Sociology of Education U 5**

Current social trends as they affect education; backgrounds of school children, social status of teachers, role of power and bureaucracy.

Au, Wi, Sp Qtrs. Prereq: 5 cr hrs in sociol. Not open to students with credit for 220. SS Admis Cond course.

**330+ Varieties of Modern Marriage U 5**

Examination of sociological and social-psychological research describing and interpreting emerging pluralistic patterns of man-woman and parent-child relationships.

**345 Contemporary American Society U 5**

An exposition of the structural patterns of American society, using sociological theories and data but integrating them into a general view.

H345 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 545. BER/GEC/LAR course.

**367 Second Writing Course U 5**

2 2-hr cl. GEC/LAR courses.

**H367.01 Politics and American Society**

Sociological analysis of American politics and society, emphasizing political elites and interest groups, and the changing role of the state in the economy.

Prereq: English 110 or 111 or equiv, 5 cr hrs of course work in polit sc or sociol, and soph standing. Not open to students with credit for 366.

**367.02 Cities and Urban Life**

The place of the city in social organization; the emergence, nature, and problems of modern urbanism; projects based on census and field data.

Prereq: English 110 or 111 or equiv, 5 cr hrs in sociol, and soph standing. Not open to students with credit for 280, 390, or 480.

**H367.03 Work and Family in the United States**

Sociological examination of linkages between occupational and economic arrangements and marital and parental experiences in the United States.

Prereq: H100 or 101, English H110 or 111 or H111, honors eligibility, and soph standing.

**370+ Social Factors in Personality U 5**

Analysis of relationships between social structure and personality; language; its consequences for social behavior; socialization: learning of motives and social roles; personality: development, organization, and disorganization.

Not open to students with credit for 470. BER/GEC/LAR course.

**380 American Ethnic Relations U 5**

Survey of the attitudes and relationships arising from the contacts of various racial and ethnic groups in the United States.

Not open to students with credit for 280 or 480. BER/GEC/LAR course. SS Admis Cond course.

**391 The Community U 5**

Development of the modern community; approaches to the study of communities; significance of processes and value systems for community organizations and disorganization.

BER course. Not open to students with credit for 590.

**405+ Social Movements and Collective Behavior U 5**

Contemporary social movements and collective behavior; their sources, issues, strategies, tactics, and impact on society.

Prereq: 5 cr hrs in sociol. Not open to students with credit for 605. GEC course.

**407 Social Change U 5**

Recent social changes, especially in Western civilization and the United States; types of societies in historical perspective; requirements of a good society.

Prereq: 5 cr hrs in sociol. Not open to students with credit for 207. BER/LAC/LAR course.

**410 Criminology U 5**

The nature and causes of crime and delinquency, criminal liability, criminal careers, and organized racketeering.

Au, Wi, Sp Qtrs. 2 2-hr cl. H410 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 487 and 488, or permission of instructor. Not open to students with credit for Criminol 410. BER course.

**430 Sociology of the Family U 5**

Analysis of relationships between the family and the larger society including mate selection, status of women, and patterns of husband-wife and parent-child relationships.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 5 cr hrs in sociol. BER course.

**434 The Child and Society U 5**

A study of the ways in which society socializes children; current breakdown in the socializing processes and implications for the school and other educational agencies.

2 2-hr cl. Prereq: 5 cr hrs in sociol.

**435 Sociology of Women U 5**

Analysis of sex-roles and social structure with emphasis on modern social movements concerned with redefining sex-role relationships.

Prereq: 5 cr hrs in sociol. GEC course.

**450 Illness and Social Behavior U 5**

Study of cultural, social, psychological, and sociological factors in disease processes, distribution of disease, definition of illness, organization of health professions and facilities.

2 2-hr cl. Prereq: 5 cr hrs in sociol.

**451 Sociology of Law U 5**

The relationship between law and social order emphasizing the structure of law, social origins of law and law as a source of social change.

2 2-hr cl. Prereq: 487 and 488. Not open to students with credit for Criminol 451.

**462+ Sociology of Organizations U 5**

Functioning of large complex social groupings; goals, structures, coordination, dispersion, survival, change as seen in various organizations: e.g.—governmental, educational, religious, business, and occupational organizations.

Prereq: 5 cr hrs in sociol. BER/GEC/LAR course.

**463 Social Stratification U 5**

Class distinction as a phase of social differentiation; origin and characteristics of social class; significance for modern society of class consciousness, class struggle, and social mobility.

2 2-hr cl. Prereq: 5 cr hrs in sociol. BER/GEC/LAR course.

**464 Sociology of Work and Industry U 5**

Analysis of work organization; control and authority relationships in the workplace; comparative studies of work and labor movements; industrial decline; automation.

Prereq: 5 cr hrs in sociol. BER course.

**465+ Work and Leisure in Mass Society U 4**

An analysis of current relationships between work and leisure, emphasizing social implications of increased leisure time and changing conceptions of work and leisure.

4 cl. Prereq: 5 cr hrs in sociol.

**466+ Sociology of Occupations and Labor Markets U 5**

Analysis of occupational differentiation; differences in work experience and outcomes across occupations; work within organizations; work and labor markets; race and sex differences in work.

2 2-hr cl. Prereq: 5 hrs in sociol. Not open to students with credit for this topic under 694.02. BER/GEC/LAR course.

**467\* Sociology of Religion U 5**

The social role of religious institutions and beliefs, with particular reference to the United States; the relation between religion and other aspects of society.

2 2-hr cl. Prereq: 5 cr hrs in sociol. GEC course.

**487 Types of Sociological Inquiry U 5**

Introduction to sociological research techniques, methodological approaches, and relevant quantitative procedures.

Au, Wi, Sp Qtrs. 3 cl, 2 2-hr labs. Prereq: Criminol or fm&hu dv or int stds or sociol major, and jr standing; or permission of instructor. Not open to students with credit for 250.

**488 Introduction to Sociological Theory U 5**

Introductory statement of the nature of sociological theory, its basic problems, assumptions, major types and orientations, and principal contributions to the discipline.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 5 cr hrs in sociol.

**498 Study Tour U 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**498.01 Domestic****498.02 Foreign****501† East Asian Social Development U G 5**

Comparative analysis of social development experiences in China, Japan, Korea, and other East Asian newly industrializing societies.

Prereq: 487 and 488, or grad standing.

**503† Soviet and East European Societies U G 5**

Development and organization of political and social institutions, with emphasis on cross-national similarities and differences in the region.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 403.

**510 Women, Crime, and the Legal System U 5**

Analysis of females as participants in and victims of crime, the treatment of women in the criminal justice system, women as workers in criminal justice fields.

Prereq: 487 and 488, or grad standing.

**511 Sociology of Youth and Crime U G 5**

A sociological perspective on youth and crime; special attention to the magnitude of youth crime, theories, juvenile justice systems, and prevention and control efforts.

Prereq: 487 and 488, or grad standing.

**549 Quantitative Research Methods in Sociology U G 5**

An introduction to the application and interpretation of quantitative analysis in sociological research; emphasis on the description of social variables and hypothesis testing.

Au, Wi, Sp Qtrs. 2 1½-hr cl and 2 1-hr labs. Prereq: 487. Not open to students with credit for 650. GEC course.

**581† The American Jewish Community U G 5**

American Jewish life-styles and organizational patterns—Jewish history, demography, institutions, religious participation, politics, relationships with non-Jews, new movements and issues.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 281. SS Admis Cond course.

**589\* Field Work in Sociology U 5****589.01 Sociology**

Practicum in the collection of sociological data through field work; identification of research problem; development of data collection methods; data processing and analysis.

Prereq: 10 cr hrs in sociol and permission of instructor. Not open to students with credit for 589.

**589.02 Criminology and Criminal Justice**

Practicum in criminology and/or the criminal justice system.

Prereq: 10 cr hrs in sociol or criminol and permission of instructor.

**597 Issues of the Contemporary World U 5**

GEC/LAR courses.

**597.01 Contemporary World Societies: Social Institutions and Social Change**

Sociological analysis of contemporary world societies—nonindustrialized, industrializing, and industrialized—with special attention to major social institutions and patterns of social change.

Prereq: Sr standing. Not open to students with credit for 301.

**597.02 World Population Problems**

General introduction to population studies, emphasizing how population growth and structure have caused or aggravated social problems in various countries.

Au, Wi, Sp Qtrs. Prereq: 5 cr hrs of social science course work, GEC data analysis requirement, and sr standing. Not open to students with credit for 313.

**601† Comparative Family Organization U G 5**

Analysis of family organizations in various societies, emphasizing the impact of changing world conditions on family and kinship structures.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 432.

**606 Social Movements and Collective Behavior U G 5**

An examination of theories and research on non-traditional group efforts to change social systems and institutions; emphasis on contemporary societies and movements.

Prereq: 10 cr hrs in sociol or grad standing. Not open to students with credit for 710 or 805.

**608 Sociological Aspects of Mass Communication U G 5**

Examination of structure and functions of mass communication systems in contemporary mass societies, including the relationship between mass media organizations and other institutions.

Prereq: 487 and 488, or grad standing.

**610† Sociology of Deviant Behavior U G 5**

An examination of the nature, types, and societal reactions to deviant behavior; special emphasis on the process of stigmatization and the emergence of deviant subcultures.

Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminol 610.

**611 Penology U G 5**

The treatment of adult offenders in detention and incarcerations; short and long term institutions.

Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminol 611.

**615† Control and Prevention of Crime and Delinquency U G 5**

Analysis of the operational effectiveness of special measures and programs pointed toward the control and prevention of crime and delinquency.

2 2-hr cl. One field project. Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminol 615.

**618 Sociology of Police and Policing U G 5**

Sociological understanding of the origins of routine police conduct and misconduct; representative topics include police-citizen encounters and police abuse of discretion.

Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminol 618.

**623\* Advanced Sociology of Education U G 5**

Comparisons of the structures and functions of educational systems, elementary through university; recruitment and allocation of personnel and resources, power, conflict, and boundary maintenance.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 523.

**629 Sociology of Health: Mental and Physical Dimensions U G 5**

Analysis of sociological and social psychological aspects of mental and physical disorders, and types of illness behavior associated with mental and physical illness.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 831.

**630 Medical Sociology U G 5**

Sociological analysis of the distribution of disease, and the nature of health care institutions, health professions and the delivery of health care services.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 730.

**635 Men in Society U G 5**

The social psychology of males, their relationships with females, other males, and society; emphasis on socialization, social roles, sexuality, etc.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 694.07 taken Au Qtr 1981, Au Qtr 1982, or Au Qtr 1983.

**640 Sociology of Everyday Life U G 5**

A basic course in ethnomethodology; a survey of the basic literature; study of the taken-for-granted, verbal and non-verbal features of social interaction; involves making observations and descriptions.

Prereq: 487 and 488, or grad standing.

**648 Qualitative Methods in Sociology U G 5**

A survey of qualitative approaches to social research, including participant observation, intensive interviewing, and archival/documentary analysis. 2 2-hr cl, fieldwork. Prereq: 10 cr hrs in sociol or grad standing. Not open to students with credit for 704.

**649 Quantitative Research Techniques in Sociology II U G 5**

Assumptions, principles, and applications of the multiple regression model in sociological practice; basic model, dummy variables, and special functional forms.

Prereq: 549 or 650 or equiv. Not open to students with credit for 884.09 Sp Qtr 1986.

**651 Approaches to Sociological Inquiry U G 5**

Theory and practice in essentials of the research process; comparison of alternative approaches and design models; questionnaire construction, interview techniques, and related problems.

2 2-hr cl, project. Prereq: 10 cr hrs in sociol or grad standing.

**652+\* Sociological Survey Research Methods I U G 5**

Design of sociological survey research: question format, questionnaire design, alternative modes of administration, etc; hands-on practice in Computer Assisted Telephone Interviewing (CATI).

Wi Qtr. Prereq: 10 cr hrs in sociol or grad standing.

**653+\* Sociological Survey Research Methods II U G 5**

Administration and analysis of sociological surveys; emphasis on development, administration, and analysis of survey data.

Sp Qtr. Prereq: 652 or written permission of instructor.

**655 Sociology of Sport U G 5**

Sport from a sociological perspective: relationship of sport to social institutions; socialization into sport; stratification within sports; sport and small group analysis.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 555.

**660 Comparative Social Organization U G 5**

A comparative analysis of organizational characteristics and functioning in different cultural settings.

Prereq: 10 cr hrs in sociol or grad standing.

**662+\* Small Groups U G 5**

Analysis of group structure and processes; examination of roles, interpersonal structure, leadership; observation of groups in laboratory and non-laboratory settings.

Prereq: 487 and 488, or grad standing. Not open to students with credit for 661 or 772.

**663 Theories of Formal Organization U G 5**

Concepts and theories of formal social organization, including internal organizational structure, inter-organizational relations, and super-organization level structure.

Prereq: 487 and 488, or grad standing.

**664+ Public Organizations U G 5**

Introduction to theory and research in public (government) organizations, exploration of behavior of these organizations, and examination of their role in the policy process.

Prereq: 487 and 488, or grad standing.

**666 Political Sociology U G 5**

Examination of structures, continuities, and processes of change; of models and building blocks; and of social contexts of power and dynamic forces altering political systems.

Prereq: 487 and 488, or grad standing.

**667+\* Sociology of Elites U G 5**

Empirical studies of the "higher circles" in the United States; reviewing studies in the upper class, bourgeoisie, ruling class, and specialized elites.

Prereq: 487 and 488, or grad standing.

**671 Population Studies I: Theory, Substance, and Techniques U G 5**

Survey of population studies covering sources of demographic data, mortality, and fertility.

Prereq: 5 cr hrs in sociol. Not open to students with credit for 550.

**672 Population Studies II: Theory, Substance, and Techniques U G 5**

Continuation of survey of population studies covering models of population growth, population theories, migration, population estimations and projections, population problems, and policy decisions.

Prereq: 671 and Math 152 or equiv recommended. Not open to students with credit for 751.

**680 Sociology of Changing Life Styles U G 5**

An in-depth look at some emerging life style patterns, such as dual-career marriages, childless marriages, single-parent families, blended families, singlehood, cohabitation, etc.

Prereq: 487 and 488, or grad standing.

**682 Earlier Developments in Sociological Theory U G 5**

Analysis of classical systems and their representatives, e.g., positivistic social evolutionism (Comte, Spencer, Durkheim), historical materialism (Marx-Engels), and humanistic idealistic reactions (Toennies, Simmel, M. Weber).

Prereq: 10 cr hrs in sociol or grad standing.

**683+ Later Developments in Sociological Theory U G 5**

Analysis of systematic orientations, e.g., social action (Znaniecki, Maclver, Parsons), functionalism (Parsons, Merton), conflict (Dahrendorf, Coser), social exchange (Blau), ethnomethodology (Garfinkel), newer structuralism (Levi-Strauss).

Not open to students with credit for 782.

**693 Individual Studies**

Su, Au, Wi, Sp Qtrs. Prereq: 20 cr hrs in sociol, or grad standing and permission of instructor. Repeatable by permission of instructor. This course is graded S/U.

**694 Group Studies U G 3-5**

Au, Wi, Sp Qtrs. Prereq: 10 cr hrs in sociol or grad standing. Repeatable to a maximum of 15 cr hrs for each decimal subdivision. Topics vary each qtr offered.

**694.01 Sociological Theory****694.02 Social Organization****694.03 Medical Sociology****694.04 Criminology and Criminal Justice****694.05 Sociology of Education****694.06 Race/Ethnic/Minority Relations****694.07 Social Psychology****694.08 The Family****694.09 Research Methodology****694.10 Urban/Community/Ecology****694.11 Labor Markets/Economy and Society****694.12 Political Sociology****694.13 Population/Demography****694.14 Gender****694.15 Unclassified****697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****General Prerequisites for Courses Numbered 700**

*Unless otherwise indicated, the prerequisites for 700-level courses are grad standing or permission of instructor.*

**Advanced Topics in National Security**

See NSP Std 702.

**705+\* Construction and Verification of Theory G 5**

The actual practice of theory construction and its underlying logic.

2 2-hr cl, project. Prereq: 487 or equiv. Not open to students with credit for 704.01. Repeatable to a maximum of 10 cr hrs.

**706 Experimental Research Methods U G 5**

Survey and analysis of research designs employing experimental methods to study human relations in various settings; business/industry, sports/recreation, home/family life, etc.

2 2-hr cl, project. Prereq: 5 cr hrs in sociol.

**707 Problems in Quantitative Analysis G 5**

A survey of advanced problems in the multivariate analysis of sociological data; topics covered include elaboration and specification, causal inference in nonexperimental research and path analysis.

Prereq: 549 or 650 or equiv. Not open to students with credit for 704.03. Repeatable to a maximum of 10 cr hrs.



**708 Problems in Qualitative Analysis G 5**

Problems and techniques of non-quantitative data analysis including case studies, participant observation, field diary, autobiography, and historical records.

Prereq: 648.

**709† Historical Sociology G 5**

Assessment of major studies in historical sociology by focusing on their internal logic, the supporting evidence, and the subsequent research.

Prereq: 648.

**711† Sociology of Work and Industry G 5**

A survey of selected topics in sociology of industrial and work relations; control, administration, leadership, and occupations; theoretical approaches to the study of industrial relations.

Not open to students with credit for 811.

**718 Advanced Criminology G 5**

A critical study of the most important aspects of criminology.

Prereq: 410 or equiv.

**735 Sociology of Gender G 5**

An examination of current theory and research on the sociology of gender through extensive readings.

Prereq: 435 or grad standing. Not open to students with credit for 602.

**742\* Human Ecology G 5**

Analysis of problems of urban structure from the ecological perspective.

Not open to students with credit for 842.

**747 Theories of Social Change G 5**

Analysis of theoretical traditions in the study of social change, and methods of constructing synthetic theories of change.

Prereq: 682 or equiv.

**748 Comparative Methods in Sociology G 5**

Basic review of methods of comparative analysis as used in the study of social change.

Prereq: 651.

**752\* Principles and Techniques of Scale Construction G 5**

Approaches and techniques in the development and testing of social measurement instruments.

2 2-hr cl, project. Prereq: 549 or equiv or Soc Work 540.

**755\* The Social Context of Human Fertility G 5**

A critical and methodological analysis of fertility, with special emphasis on the social context of reproductive behavior in American society.

**756\* Migration and Social Mobility G 5**

Theories and models of population mobility; determinants and consequences of the migration process; policy implications of rural-urban migration.

**760 International Inequality and Underdevelopment G 5**

Sociological theories of development and research on issues in comparative development in the global system.

Prereq: 10 cr hrs in sociol or grad standing.

**761 Social Stratification G 5**

A survey of major theories, issues, and empirical literature on societal stratification and inequality with particular focus on the United States.

2 2-hr cl. Not open to students with credit for 861.

**762† Comparative Social Inequality G 5**

Using historical and cross-national approaches, two aspects of social inequality are examined: class relations and the distribution of goods.

**766† Advanced Sociology of Labor Markets and Occupations G 5**

Theory and research covering labor market segmentation; occupational and organizational perspectives on markets; work authority and local markets; markets as structures; market effects on worker outcomes.

**770 Individual in Society G 5**

Analysis and synthesis of the major theories and findings of social psychology.

**771† Symbolic Interaction G 5**

Analysis of the relationship between the individual and the social structure; particular reference paid to the symbolic interaction orientation.

**777\* Comparative Political Economy G 5**

The comparative analysis of the state in contemporary economic systems: the politics of economic policies; the welfare state; and industrial development policies.

**780 Racial and Ethnic Differentiation G 5**

An analysis of the origin, persistence, adaptation and change of systems and racial and ethnic differentiation.

**H783 Honors Research U 3-5**

A conference-thesis course; subject matter will vary depending upon the student's topic.

Su, Au, Wi, Sp Qtrs. Arr. These courses are graded S/U.

**H783.01 Sociology**

Prereq: 4th yr standing with a grade of A in at least half of the sociol courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA *with distinction* in sociol. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in H783.

**H783.02 Criminology and Criminal Justice**

Prereq: 4th yr standing with a grade of A in at least half of the criminol and/or sociol courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA *with distinction* in criminol. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in Criminol H783.

**790\* Social Organization of the Community G 5**

An examination of the nature, structures, processes, and trends of social organization of modern communities.

**792 Structural Sociology G 5**

Key concepts, issues, recent trends in the study of social structure with special emphasis on formal social organizations, social stratification, comparative social systems, groups and research methods.

Au Qtr. 5 cl. Prereq: Grad standing in sociol.

**Studies in National Security Policy**

See NSP Std 795.

**General Prerequisites for Courses Numbered 800**

*Unless otherwise indicated, the prerequisites for 800-level courses are 30 qtr hrs in the same discipline at the 600 level or higher, of which 15 hrs must be at the 700 level.*

**800 Proseminar in Sociology G 2**

Each week an area of specialization within sociology will be discussed by a professor whose major interest is in that area; provides an overview of special topics and current issues.

Repeatable to a maximum of 6 cr hrs. Open only to 1st year grad students in sociol. This course is graded S/U.

**820† Seminar in the Sociology of Education G 5**

Special problems will be considered in different quarters, including urban education, student movements, bureaucratic-professional problems, school-community relations, and innovation.

Repeatable to a maximum of 10 cr hrs.

**830\* Seminar in Medical Sociology: Problems in the Sociology of Health Organization G 5**

Analysis of theory and research bearing upon the role of medicine in society and the health organizations on national, community, and institutional levels.

Prereq: 730 or permission of instructor.

**837† Seminar in Public Opinion and Political Sociology G 5**

Selected problems in the study of opinions and opinion climates, with special emphasis on their relation to elections and political institutions in a cross-national context.

Prereq: Permission of instructor.

**841† Sociology of Urban Sub-Communities G 5**

Examination of society and culture of sub-communities such as ethnic and racial ghettos, suburbia; generalization about the patterns of integration with larger systems.

2 2-hr cl.

**848† Seminar in the Sociology of Religion G 5**

An analysis of selected contemporary problems in the sociology of religion; religious organization and involvement.

**850 Seminar in Sociological Research Methods G 1-5**

Special topic seminars in research methodology.

Repeatable to a maximum of 30 cr hrs.

**859 Practicum in Sociological Research G 1-15**

Supervised practical experience in the independent execution of sociological research, the application of appropriate analytical techniques, and preparation of research reports.

Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**862+ Seminar in Complex Organizations G 5**

Analysis of bureaucratization, structure, boundary problems, resource allocation, organizational change and conflict.

**864+ Seminar: Organizational Environments G 5**

Theory and analysis of organization-environment relations, inter-organizational relations, and the structure of social environments.

Prereq: 663 or equiv.

**882+ Systematic Social Theory in Progress G 5**

Examination of the logical structure and empirical status of current and emerging theories.

**884 Seminars in Sociology**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs for each decimal subdivision.

- 884.01 Sociological Theory G 1-5
- 884.02 Social Organization and Planning G 1-5
- 884.03 Medical Sociology G 1-5
- 884.04 Criminology and Criminal Justice G 1-5
- 884.07 Social Psychology G 1-5
- 884.08 The Family G 1-5
- 884.09 Research Methodology G 1-5
- 884.11 Labor Markets/Economy and Society G 1-5
- 884.12 Political Sociology G 1-5
- 884.13 Population/Demography G 1-5
- 884.14 Gender G 1-5
- 884.15 Unclassified G 1-15

**888\* Seminar in the American Family G 1-5**

An examination of relevant issues, trends, and problems with emphasis on theoretical orientations and research findings.

**998 Research in Sociology: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research in Sociology: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

- 999.04 Criminology and Criminal Justice
- 999.06 Race/Ethnic/Minority Relations
- 999.10 Urban/Community/Ecology
- 999.11 Labor Markets/Economy/Society
- 999.12 Political Sociology
- 999.13 Population/Demography
- 999.14 Gender
- 999.15 Unclassified

## Spanish

266 Cunz Hall, 1841 Millikin Road, 292-4958

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 (including the decimal subdivisions such as 101.51, etc.) and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.

Spanish 101-201 and 401-402 are also offered every Au, Wi, and Sp Qtrs. through The Ohio State University Elementary Spanish Language Program in Cuernavaca, Morelos, Mexico.

Information concerning frequency and quarter(s) of offering, if not specified, may be obtained by contacting the department.

**101 Elementary Spanish I**

Introduction to Spanish; development of listening, reading, speaking, and writing skills.

Su, Au, Wi, Sp Qtrs. Not open to students with credit for 100.02, or to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of study in this language in high school, except by permission of dept. GEC/LAR courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102 Elementary Spanish II**

Continued study of Spanish; development of listening, reading, speaking and writing skills.

Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses. FL Admis Cond courses.

**102.01 Classroom Track U 5**

Prereq: 100.02 or 101.01 or 5 cr hrs of 101.02 or 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.66 Intensive Spanish for Review I U 5**

Intensive review of basic vocabulary, structures, and skills needed for entry into 103.

2 2-hr cl and 1-hr cptr lab. Prereq: 2 or more years of high school Spanish and placement at 101 level. Not open to native speakers of Spanish through regular course enrollment or EM credit, or to students with credit for 101.01, 101.51, 102.01, or 102.51.

**103 Intermediate Spanish I**

Continued study of Spanish; development of listening, reading, speaking, and writing skills; readings based on Spanish culture and literature.

Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses.

**103.01 Classroom Track U 5**

Prereq: 102.01 or 5 cr hrs of 102.51 or 110. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**103.66 Intensive Spanish for Review II**

2 2-hr cl and 1-hr cptr lab. Prereq: 3 or more years of high school Spanish and placement at 102 level. Not open to native speakers of Spanish through regular course enrollment or EM credit, or to students with credit for 102.01, 102.51, 102.66, 103.01, or 103.51.

**104 Intermediate Spanish II U 5**

Reading of Spanish short stories, plays, and novels with attention to literary appreciation; development of basic language skills; course conducted in Spanish. This course is available for EM credit.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 103.01 or 5 cr hrs of 103.51 or 112. Not open to native speakers of this language through regular course enrollment or EM credit; or to students with credit for 104 or any other 104 decimal subdivision. This course is available for EM credit. GEC/LAR course.

**108+ Elementary-Intermediate Spanish for Selected Students U 5**

Wi Qtr. 5 cl. Prereq: Grade of A in 101 and permission of dept. Not open to students with credit for 102, 103, 110, 111, 112, 162, or 163; or to native speakers of this language through regular course enrollment or EM credit. Successful completion of 101-108-109 fulfills the Arts and Sciences foreign language requirement. GEC/LAR course.

**109+ Elementary-Intermediate Spanish for Selected Students U 5**

Continuation of 108.

Sp Qtr. 5 cl. Prereq: 108 or 162. Not open to students with credit for 103, 104, 111, 112, or 163; or to native speakers of this language through regular course enrollment or EM credit. Successful completion of 101-108-109 fulfills the Arts and Sciences foreign language requirement. GEC/LAR course.

**110 Intensive Elementary Spanish U 5 or 10**

Elementary Spanish for students wishing to acquire the basic skills in one quarter; intensive drill in form, syntax, vocabulary, and idiom; equivalent to 101 and 102.

Su, Au, Wi, Sp Qtrs. 10 cl. Prereq: Permission of dept. Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 101 or the equiv may not register for more than 5 cr hrs. GEC/LAR course.

**111 Intensive Intermediate Spanish U 5 or 10**

An intensive course that combines the content of 103 and 104.01 to complete the presentation of the basic Spanish grammar and to give extensive practice in the four language skills.

Su, Au, Wi, Sp Qtrs. 5 2-hr cl. Prereq: 110 or 102 or equiv with written permission of instructor. Not open to students with credit for 104 or 104 decimal subdivisions; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 or 112 may not register for more than 5 cr hrs. Course intended for students who wish to expedite the completion of the language requirement. GEC/LAR course.

**150 Introduction to the Culture and Literature of Spain and Portugal U 5**

Introduction to the principal developments of the culture of Spain and of Portugal through literature, art, music, film, and folklore.

2 2-hr cl, 1 1-hr rec. Not open to students with credit for 271 or 272. BER/LAC/LAR course.

**151 Introduction to Latin American Culture and Literature U 5**  
Introduction to the culture of Spanish America and Brazil through literature, art, music, film, and folklore.  
2-2-hr cl, 1-1-hr rec. Not open to students with credit for 273. BER/GEC/LAR course.

**201 Elementary Spanish Conversation and Composition U 5**  
Intensive practice in oral and written Spanish, based on texts and periodicals concerned with contemporary Spain and Spanish America; grammar and idiom review.  
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 104. Course conducted in Spanish. Not open to students with credit for 105 or to native speakers through regular course enrollment or EM credit. This course is available for EM credit.

**206 Introduction to Business Spanish U 5**  
A preparatory course in business Spanish, focusing on the development of language skills within a business context.  
Au Qtr. 2-2-hr cl. Prereq: 104. Not open to native speakers of this language through regular course enrollment or EM credit.

**250 Fact and Fiction: A Reading Course in Spanish U 3**  
Reading strategies and reading practice based on authentic Spanish texts, both journalistic and literary.  
Sp Qtr. 2 1½-hr cl. Prereq: 105 or 201.

**293 Individual Studies U 1-15**  
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**294 Group Studies U 1-15**  
Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.

**401 Review Grammar U 5**  
Review of major grammatical principles, with extensive oral and written practice.  
Su(1st term), Au, Wi, Sp Qtrs. 5 cl. Prereq: 105 or 201 or 206. H401 (honors) may be available to students enrolled in an honors program or by permission of instructor.

**402 Intermediate Spanish Conversation U 3**  
Practice in speaking Spanish: vocabulary building, basic syntactic structures, pronunciation.  
Su (2nd term), Au, Wi, Sp Qtrs. 4 cl. Prereq: 401 and 404 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

**403 Intermediate Spanish Composition U 3**  
Spanish prose forms and practice in writing descriptive, narrative, and personal compositions; letters, essays, and precis.  
Au, Wi, Sp Qtrs. 3 cl. Prereq: 401 and 404. Not open to native speakers of this language through regular course enrollment or EM credit.

**404 Spanish Pronunciation U 3**  
Practice with corrective exercises; some attention to problems of teaching pronunciation.  
Au, Wi, Sp Qtrs. 4 cl. Prereq: 104. Not open to students with native pronunciation.

**406 Intermediate Business Spanish U 5**  
An introduction to business Spanish with emphasis on business terminology, commercial transactions, and international procedures.  
Wi Qtr. 2-2-hr cl. Prereq: 206 and any 400-level course or permission of instructor. Taught in Spanish.

**450 Introduction to the Study of Literature in Spanish U 5**  
Intensive study of selected prose, poetry, and drama from Spain and Spanish America.  
Su (2nd term), Au, Wi, Sp Qtrs. 5 cl. Prereq: 401. Not open to students with credit for 421 or 422 or 423. Required for Spanish majors. This course is available for EM credit.

**498+ Study Tour U 15**  
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.  
Prereq: Permission of instructor. Repeatable for different titled study tours only.

498.01 Domestic  
498.02 Foreign

**551 Masterpieces of Spanish Golden Age Literature U G 5**  
Introductory critical study of major literary works from the 16th and 17th centuries in Spain.  
4 or 5 cl. Prereq: 450. Not open to students with credit for 422.

**552 Masterpieces of Modern Spanish Literature U G 5**  
Introductory critical study of major literary works from the 19th and 20th centuries in Spain.  
4 or 5 cl. Prereq: 450. Not open to students with credit for 421.

**555 Indigenous and Colonial Literatures of Spanish America U G 5**  
Introductory critical study of issues and processes in the formation of indigenous and colonial expression through 19th century regional discourses.  
2-2-hr cl. Prereq: 450. Not open to students with credit for 423 or 553.

**556 Modern Spanish American Literature U G 5**  
Introductory critical study of issues and processes in Spanish American writing from Modernism through the 20th century.  
2-2-hr cl. Prereq: 450. Not open to students with credit for 423 or 553.

**560 Introduction to Spanish American Culture U G 5**  
Major elements in the culture of the peoples of Spanish America.  
2-2-hr cl. Prereq: 402 or 403. Taught in Spanish. Intended for majors in foreign language educ and Romance languages. Not open to students with credit for 640.

**561 Introduction to the Culture of Spain U G 5**  
Major developments in the culture of Spain.  
2-2-hr cl. Prereq: 402 or 403. Taught in Spanish. Intended for majors in foreign language educ and Romance languages. Not open to students with credit for 641.

**571 Basic Spanish for Graduate Students G 5**  
Designed primarily for students who have no formal preparation in Spanish covering basic grammar and vocabulary.  
Au Qtr. This course is also offered Su, Au, Wi, Sp Qtrs through the Ohio State University Elementary Spanish Language program in Cuernavaca, Morelos, Mexico. 5 cl. Prereq: Grad standing. Credit does not apply to the minimum number of hrs required for the master's or doctoral degree. No audit.

**572 Spanish for Research I G 3**  
Wi Qtr. This course is also offered Su, Au, Wi, Sp Qtrs through the Ohio State University Elementary Spanish Language program in Cuernavaca, Morelos, Mexico. 3 cl. Prereq: Grade of C or above in 571, or equiv preparation demonstrated by a placement test. Credit does not apply to the minimum number of hrs required for the master's or doctoral degree. No audit. Repeatable to a maximum of 9 cr hrs. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement.

**573 Spanish for Research II G 3**  
Sp Qtr. This course is also offered Su, Au, Wi, Sp Qtrs through the Ohio State University Elementary Spanish Language program in Cuernavaca, Morelos, Mexico. 3 cl. Prereq: Grade of A or B in 572, or equiv preparation demonstrated by a placement test. Credit does not apply to the minimum number of hrs required for the master's or doctoral degree. No audit. Repeatable to a maximum of 9 cr hrs. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a thorough reading knowledge in fulfillment of PhD language requirement.

**601 Modern Spanish Syntax U G 5**  
Study of modern Spanish grammar; modern tendencies in syntactic analysis.  
5 cl. Prereq: 402, 403, and 450.

**602 Advanced Spanish Conversation U G 3**  
Practice in speaking Spanish; building of specialized vocabulary; reinforcement of complex syntactic structures; emphasis on pronunciation.  
4 cl. Prereq: 402. Not open to native speakers of this language through regular course enrollment or EM credit. Conducted in Spanish.

**603 Advanced Spanish Composition and Translation U G 3**  
Translation from Spanish to English and from English to Spanish; analysis of different prose styles; practice in writing fluent Spanish compositions.  
3 cl. Prereq: 601 and jr or sr standing. GEC/LAR course.

**604 Spanish Phonetics U G 5**  
Analysis of the phonological structure of Spanish and a comparison with English; practical problems of teaching pronunciation.  
2-2-hr cl. Prereq: 404 or permission of instructor.

**606 Advanced Business Spanish U G 5**  
An in-depth study of the Hispanic economic, social, and cultural environment as it relates to business.  
Sp Qtr. 2-2-hr cl. Prereq: 406 or permission of instructor.

**610 Contrastive Structures of Spanish and English U G 5**  
Phonetics, phonemics, morphology, and syntax of Spanish contrasted with English.  
5 cl. Prereq: 401, 402, 403, 404, and 450.

**650 Senior Seminar in Spanish or Spanish American Literature U G 5**  
Intensive study of a major author, literary work, or theme; topic varies, for example: Cervantes, Spanish literature of the Civil War, novels of the Mexican Revolution.  
2-2-hr cl. Prereq: Two of the following: 551, 552, 555, 556. Repeatable to a maximum of 15 cr hrs. Required for Spanish majors.

**660 Senior Seminar in Hispanic Culture U G 5**

Intensive study of a major theme or problem in Hispanic culture; topic varies, for example: Post-Franco Spain, Latin American Revolutionary thought.  
2 2-hr cl. Prereq: 560 or 561. Repeatable to a maximum of 15 cr hrs.

**693 Individual Studies U G 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-15**

Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**702 Introduction to Literary Analysis U G 5**

Literary criticism and methods of discourse analysis; emphasis on application of critical concepts.

Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Intended for beginning grad students; may be taken by advanced undergraduates with permission of instructor.

**703 Research Methods and Design G 5**

Introduction to research methods and design in Hispanic literatures and cultures.

Sp Qtr. 2 2-hr cl. Prereq: Grad standing.

**730 Introduction to Spanish Linguistics U G 5**

A broad introduction to Spanish linguistics: survey of Spanish data as they relate to phonological, morphological, syntactic, and semantic analysis, historical development, and sociolinguistic variations.

Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

**732 Spanish Syntax and Semantics G 5**

Introduction to structural and semantic characteristics of Spanish in the light of recent theoretical frameworks in linguistics.

Wi Qtr. 2 2-hr cl. Prereq: 730 or permission of instructor.

**734 Spanish Phonology and Morphology G 5**

Introduction to phonological and morphological characteristics of Spanish in the light of recent theoretical frameworks in linguistics.

Wi Qtr. 2 2-hr cl. Prereq: 730 or permission of instructor. Not open to students with credit for 704.

**736 History of the Spanish Language G 5**

Basic concepts of historical linguistics: the major factors of change in the history of the Spanish language from Latin to the present.

Au Qtr. 2 2-hr cl. Prereq: 730 or permission of instructor. Not open to students with credit for 811.

**738 Spanish Sociolinguistics G 5**

Introduction to the analysis of linguistic and social factors which contribute to variation in modern Spanish.

2 2-hr cl. Prereq: 730 or permission of instructor.

**739 Introduction to Medieval Spanish U G 2**

Introduction to Medieval Spanish sounds, forms, constructions, and vocabulary, based on reading and linguistic comment of representative texts.

1 2-hr cl. Prereq: 404 and 601, or permission of instructor.

**751 Medieval Spanish Literature U G 5**

History of Spanish literature from 1100 to 1500 with emphasis on representative authors and literary works.

2 2-hr cl. Prereq: 650 or grad standing. Not open to students with credit for 720 or 820.

**752 Spanish Golden Age Literature U G 5**

History of Spanish literature from 1500 to 1700 with emphasis on representative authors and literary works.

2 2-hr cl. Prereq: 650 or grad standing.

**753 Spanish Literature of the 18th and 19th Centuries U G 5**

History of Spanish literature from 1700 to 1900 with emphasis on representative authors and literary works.

2 2-hr cl. Prereq: 650 or grad standing.

**754 20th-Century Spanish Literature U G 5**

History of Spanish literature from 1900 to the present with emphasis on representative authors and literary works.

2 2-hr cl. Prereq: 650 or grad standing.

**755 Colonial and 19th-Century Spanish American Literature U G 5**

History of Spanish American literature from the colonial period to 1900 with emphasis on representative authors and works.

2 2-hr cl. Prereq: 650 or grad standing.

**756 20th-Century Spanish American Literature U G 5**

History of Spanish American literature from 1900 to the present.

2 2-hr cl. Prereq: 650 or grad standing.

**760 Topics in Spanish American Culture and Civilization U G 5**

Analysis of Spanish American culture through the study of selected topics in literature, film, and the arts; topics vary.

2 2-hr cl. Prereq: 560 or permission of instructor. Open only to grad students and to srs majoring in Spanish by permission of instructor. Repeatable to a maximum of 15 cr hrs.

**761 Topics in Spanish Culture and Civilization U G 5**

Analysis of Spanish culture through the study of selected topics in literature, film, and the arts; topic varies.

2 2-hr cl. Prereq: 561 and grad standing, or sr standing in Spanish with permission of instructor; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

This course offers undergraduates with special aptitudes a greater opportunity to do independent study than is possible in the ordinary course.

Su, Au, Wi, Sp Qtrs. Conference, library or phonetics laboratory arr. Prereq: 4th yr standing with a record of A in at least half of the Spanish courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**790 Foundations of Contemporary Critical Theory U G 5**

Interdisciplinary survey of the theoretical bases of the major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.

Wi Qtr. 2 2-hr or 5 cl. Prereq: Jr or sr or grad standing. Cross-listed in Comparative Studies in the Humanities, English, French, German, and Italian.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments present colloquia on subjects of mutual interest; topics to be announced.

Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**801 Teaching Spanish at the College Level G 5**

Methods and techniques for teaching Spanish language at the college level.

Au Qtr. Two-wk intensive workshop previous to beginning of qtr followed by 3-5 2-hr cl during qtr. Prereq: Teaching associate in the Dept of Spanish and Portuguese or permission of instructor. Not open to students with credit for Ed-Stds 801.03. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs. Cross-listed in Educational Studies as 801.03.

**833 Studies in Spanish Synchronic Linguistics G 5**

Investigation of selected topics in synchronic Spanish linguistics (formal problems in Spanish phonology, morphology, syntax, semantics, and lexicology).

2 2-hr cl. Prereq: 732 or 734 (depending on topic), and permission of instructor. Repeatable to a maximum of 20 hrs, including cr hrs earned in 814; individual topics not repeatable.

**836 Studies in Spanish Historical Linguistics G 5**

Study of selected problems of Old Spanish linguistic description and diachronic evolution of Spanish.

2 2-hr cl. Prereq: 736 or permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs earned in 812; individual topics not repeatable.

**839 Seminar in Spanish Linguistics G 5**

Collaborative investigation of specific problems in Spanish linguistics (synchronic and historical, formal, and applied topics).

1 3-hr cl. Prereq: 833 or 836 or permission of instructor. Repeatable to a maximum of 20 cr hrs; individual topics not repeatable.

**851 Studies in Medieval Spanish Literature G 5**

Intensive exploration of a special topic or problem; topic varies, for example: medieval epic poetry, medieval lyric poetry.

2 2-hr cl. Prereq: 10 cr hrs in Spanish at the grad level. Repeatable to a maximum of 20 cr hrs.

**852 Studies in Spanish Golden Age Literature G 5**

Intensive exploration of a special topic or problem; topic varies, for example: Renaissance and Baroque poetry, Picaresque novel, Golden Age drama.

2 2-hr cl. Prereq: 10 cr hrs in Spanish at the grad level. Repeatable to a maximum of 20 cr hrs.

**853 Studies in Spanish Literature of the 18th and 19th Centuries G 5**

Intensive exploration of a special topic or problem; topic varies, for example: literature and society in the 18th century, romantic poetry and drama, realist and naturalist novel.

2 2-hr cl. Prereq: 10 cr hrs in Spanish at the grad level. Repeatable to a maximum of 20 cr hrs.

**854 Studies in 20th-Century Spanish Literature G 5**

Intensive exploration of a special topic or problem; topic varies, for example: the generation of 1898, contemporary poetry, post-Civil War novel.

2 2-hr cl. Prereq: 10 cr hrs in Spanish at the grad level. Repeatable to a maximum of 20 cr hrs.

**855 Studies in Colonial and 19th-Century Spanish American Literature G 5**

Intensive exploration of a special topic or problem; topic varies, for example: 16th century chronicles, romanticism, modernist poetry.

2 2-hr cl. Prereq: 10 cr hrs in Spanish at the grad level. Repeatable to a maximum of 20 cr hrs.

**856 Studies in 20th-Century Spanish American Literature G 5**

Intensive exploration of a special topic or problem; topic varies, for example: contemporary poetry, novel until 1945, novel after 1945.

2 2-hr cl. Prereq: 10 cr hrs in Spanish at the grad level. Repeatable to a maximum of 20 cr hrs.

**861 Seminar in Spanish Literature G 3-5**

Research topic to be announced.

Au Qtr. Prereq: Permission of instructor. Not open to students with 20 cr hrs of 831. Repeatable to a maximum of 20 cr hrs.

**862 Seminar in Spanish Literature G 2-5**

Research topic to be announced.

Wi Qtr. Prereq: Permission of instructor. Not open to students with 20 cr hrs of 832. Repeatable to a maximum of 20 cr hrs.

**863 Seminar in Spanish Literature G 3-5**

Research topic to be announced.

Wi Qtr. Prereq: Permission of instructor. Not open to students with 20 cr hrs of 833. Repeatable to a maximum of 20 cr hrs including cr hrs in 831, 832, and 833.

**865 Seminar in Latin American Cultures G 5**

Intensive exploration of a cultural period, topic, or problem; topic varies.

Sp Qtr. 1 3-hr cl. Prereq: 760 or equiv. Repeatable to a maximum of 20 cr hrs.

**866 Seminar in Spanish Culture G 5**

Intensive exploration of a cultural period, topic or problem; topic varies.

Au Qtr. 2 2-hr cl. Prereq: 761 or equiv. Repeatable to a maximum of 20 cr hrs.

**880 Foundations of Modern Literary Theory G 5**

Survey of the various historical sources of modern literary theory, from Aristotle to Stylistics and Prestructuralism; special attention to questions relevant to Hispanic literatures.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing.

**881 Literary Theory since Formalism G 5**

Panoramic view of twentieth-century literary theory since formalism, with emphasis on structuralism and post-structuralism; special attention to issues relevant to Hispanic literatures.

2 2-hr cl. Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs.

**882 Seminar in Literary Theory G 5**

Intensive study of special topics in literary theory with attention to their relationship to Hispanic literature; possible topics: reception theory; deconstruction; sociology of literature.

2 2-hr cl. Prereq: One graduate level course in literary theory. Repeatable to a maximum of 20 cr hrs.

**886 Bibliography and Method G 3**

Introduction to problems, tools, and methods of linguistic and literary research.

**893 Individual Studies G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**894 Group Studies G 1-15**

Investigation of minor problems in the various fields of Spanish literature and language.

Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

**899 Interdepartmental Seminar G 3-5**

Two or more departments present seminars on subjects of mutual interest: topics to be announced.

Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

**999 Research in Spanish Language or Literature G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Speech and Hearing Science

110 Pressey Hall, 1070 Carmack Road, 292-8207

The department is currently undergoing a substantial curriculum revision. Please contact the Department of Speech and Hearing Science for information.

**040 Personal Speech and Hearing Rehabilitation U 2**

Personal speech and hearing rehabilitation for students with articulation, voice, stuttering, language, or hearing problems.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Credit shall not count toward graduation. For students with speech or hearing disorders. Repeatable. This course is graded S/U.

**230 Introduction to Communication and Its Disorders U 3**

Survey of the topics, methodologies, and applications of speech and hearing science in normal and aberrant communication; lectures and readings.

Au Qtr.

**245 Principles of Phonetics U 4**

The available descriptions of the sounds of speech and a comparative study of the systems of representing the sounds.

Au Qtr. Prereq or concur: 230 or permission of instructor.

**250 Brain Mechanisms of Language U 5**

Exploration of the neurological basis of language in humans and other species; examination of language deficits caused by brain damage.

Sp Qtr.

**294 Group Studies U 1-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 10 cr hrs.

**338 Anatomy and Physiology of the Speech and Voice Mechanism U 4**

The speech and voice mechanism, anatomy and physiology of oral, pharyngeal and respiratory structures involved in sound production for communication.

Au Qtr. Prereq: College-level biology.

**342 Anatomy and Physiology of the Auditory and Vestibular Mechanism U 3**

The anatomical properties and physiological processes of the system of hearing and balance in man.

Au Qtr. Prereq: College-level biology.

**365 Observation in Communication Disorders U 2**

Observation in appraisal and treatment of communication disorders.

Au, Wi, Sp Qtrs. Prereq: 230 or 235, and soph standing.

**365.01 Speech and Language Pathology**

Observation of clinical management of children and adults with speech and language disorders.

Not open to students with credit for 565.01.

**365.02 Audiology**

Observation of clinical management of children and adults with hearing disorders.

Not open to students with credit for 565.02.

**430 Normal Development of Communication in Children U 5**

Introduction to the development of communication in normal children.

Sp Qtr. Prereq: Permission of instructor.

**454 Speech Science U 4**

Normal speech production and perception with emphasis on phonatory and articulatory processes and speech acoustics.

Wi Qtr. Prereq: 245, 338, and Physics 501; or equivalents.

**456 Hearing Science U 3**

The stimulus processing capabilities of the normal auditory system.

Wi Qtr. Prereq: 342 and Physics 501, or equivalents.

**540 Introduction to Audiology U G 5**

The nature, causes, identification, and rehabilitative treatment of persons with hearing disorders.

Sp Qtr. Prereq: 456.

**560 Articulation U G 3**

Etiology, evaluation, and management of articulation disorders.

Sp Qtr. Prereq: 245 or Linguist 201, and 338 or college-level anatomy.

**General Prerequisites for Courses Numbered 600-700**

*A general foundation in undergrad courses in normal and disordered communication and related sciences is assumed in addition to listed specific prerequisites. Two exceptions are 714 and 716; other exceptions at the discretion of instructor.*

**605 Multicultural Aspects of Communication and its Disorders U G 3**

Examination of normal communicative behavior, including development, and the assessment and management of speech-language-hearing disorders of culturally and linguistically diverse populations.

Wi Qtr. Prereq: Grad standing or one of the following: 230 or 430, or Linguist 201, 202, 261, or 265; or equiv.

**610 Symbolic Representation in Human Communication U G 5**

Complex logical problems in human communication.

Sp Qtr. Prereq: Sr standing and completion of college math requirement.

**624 Neurology of the Speech and Hearing Mechanism U G 5**

The neuroanatomical and physiological features involved with human communication.

Au Qtr. Prereq: Sr standing in speech and hearing science or grad standing.

**632 Introduction to Aural Rehabilitation I U G 3**

Study of amplification devices, auditory training, speech reading, and the speech and language deficits of the hearing impaired.

Au Qtr.

**635 Instrumentation U G 4**

Prereq: 540. Not open to students with credit for 635.

**635.01 Speech Sciences and Speech Pathology**

Fundamental concepts of electronic devices for speech sciences and speech pathology.

Au Qtr.

**635.02 Audiology**

Fundamental concepts of electronics with applications in audiology.

Wi Qtr.

**636 Audiological Evaluation I U G 5**

A study of the basic techniques in hearing assessment in clinical practice.

Au Qtr. Prereq: 540.

**640 Disorders of Communication Associated with Craniofacial Anomalies U G 3**

Evaluation and treatment of communication disorders related to craniofacial anomalies, emphasis on research pertaining to cleft palate.

Sp Qtr. Prereq: 624.

**642 Electrophysiologic and Behavioral Evaluation of Auditory Function U G 5**

Detailed treatment of theoretical and practical considerations for assessment of site of auditory lesion.

Wi Qtr. Prereq: 636.

**645 Pediatric Audiology I U G 3**

Etiology and assessment of hearing loss in children.

Sp Qtr. Prereq: 636.

**646 Audiological Habilitation II U G 3**

Academic, social, emotional, vocational and adjustment problems associated with hearing loss in children and adults.

Sp Qtr. Prereq: 632.

**647 Electrophysiologic Evaluation and Behavioral Methods in Pediatric Audiology U G 3**

Study of electrophysical assessment techniques appropriate for the pediatric client.

Au Qtr. Prereq: 645.

**652 Stuttering: Theories and Therapies U G 3**

Theories, principles, and procedures for the appraisal and treatment of persons with dysfluencies in speech.

Wi Qtr. Prereq: Sr standing in speech and hearing science or grad standing.

**653 Communication-Language Disorders in Children U G 3**

An integrated series concentrating on clinical aspects of language and communicative function.

**653.01 Communication Development and Disorders in Infants and Young Children**

Development of interaction and communication in preverbal and minimally verbal children with emphasis on adult-child interaction.

Au Qtr. Prereq: 430 or equiv. Not open to students with credit for this topic under 653, 717, 940, or 950.

**653.02 Language Development and Disorders in Preschool and Older Children**

Social and cognitive approaches to language disorders in preschool and school-aged children in the areas of syntax, semantics, and pragmatics.

Wi Qtr. Prereq: 653.01 or equiv. Not open to students with credit for 665.

**653.03 Communication-Language Intervention in Infants and Young Children**

Survey, demonstration, and practice of clinical approaches to communicatively delayed children with a focus on parent, teacher, and clinician roles.

Su Qtr. Prereq: 653.01 or equiv. Not open to students with credit for this topic under 665, 717, 940, or 950.

**653.04 Language Intervention in Preschool and Older Children**

Identification, assessment, and remediation strategies for children and adolescents with language-learning problems.

Sp Qtr. Prereq: 653.02 or equiv. Not open to students with credit for 666.

**655 Speech-Language Pathology: Appraisal U G 3**

Basic principles, procedures, and techniques in the evaluation and reporting of speech and language disorders.

Wi Qtr. Prereq: Sr standing in speech and hearing science or grad standing.

**659 Voice Disorders U G 3**

Etiology, evaluation, and management of voice disorders.

Wi Qtr. Prereq: Sr standing in speech and hearing science or grad standing.

**670 Speech, Hearing, and Language Problems in the School U G 3**

First course in the certification curriculum for school speech pathology; emphasis on program administration, interdisciplinary evaluation, and intervention.

Au Qtr. Prereq: Sr or grad standing in sph/hrng.

**692 Workshops U G 1-8**

Intensive study of a clinical area newly expanded within the field; geared for practicing clinicians to update information and increase skill levels.

Su Qtr. Arr. Prereq: Written permission of workshop director. Repeatable to a maximum of 12 cr hrs.

**693 Individual Studies U G 1-5**

Conference, library, and laboratory work.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**698t Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****710 Clinical Approaches to Articulation and Phonological Disorders U G 3**

Approaches to understanding the nature, assessment, and remediation of articulation and phonological disorders in children.

Au Qtr. Prereq: 430 and 560, or equivalents.

**714 Signed English U G 3**

Introductory course in an English-based sign language system.

Au, Wi, Sp Qtrs.

**716 English Language Based Sign Systems U G 2**

Review of extant systems with concentrated practice with one to achieve fluency.

Wi Qtr. Prereq: 714. Repeatable to a maximum of 4 cr hrs.

**717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3**

Focus on interdisciplinary topics in mental retardation and developmental disabilities.

Prereq: Permission of instructor. Cross-listed in Allied Medicine, Educational Services and Research, Family Relations and Human Development, Human Nutrition and Food Management, Nursing, Physical Education, Psychology, and Social Work.

**717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children**

Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models. Wi Qtr. Not open to students with credit for 717.01 in any of the cross-listed areas.

**717.02 The Interdisciplinary Team: Clinical and Administrative Issues**

Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.

Su Qtr. Not open to students with credit for 717.02 in any of the cross-listed areas.

**720 Community and Industrial Audiology U G 3**

The effect of noise on hearing, physiological and psychological function, productivity and communication; federal and state regulations reviewed and effects on communities discussed.

Wi Qtr.

**725 Interviewing and Counseling the Communicatively Handicapped U G 3**

The structure, function, and importance of the clinical interviewing and counseling process for the speech and language pathologist or audiologist. Au Qtr. Prereq: 655 or 632 and 636.

**735 Hearing Aids U G 4**

Electroacoustic characteristics and analysis of hearing aids; hearing aid selection, evaluation, procurement, fitting, and orientation.

Wi Qtr.

**736 Disorders of Communication Associated with Neuropathologies U G 3**

The nature, diagnosis, and treatment of linguistic/paralinguistic manifestations of adult neurological damage.

**736.01 Linguistic and Paralinguistic Language Disorders Resulting from Brain Injury in Adults**

Wi Qtr. Prereq: 624.

**736.02 Motor Speech Disorders Resulting from Brain Injury**

The nature, diagnosis, and treatment of motor speech manifestations of adult neurological damage.

Sp Qtr. Prereq: 624.

**736.04 The Evaluation and Treatment of Dysphagia**

Assessment and treatment of dysphagia in an interdisciplinary setting, with emphasis on the role of the speech-language pathologist on the interdisciplinary team.

Sp Qtr. Prereq: 338 and 624.

**737 Proseminar in Cognitive Science U G 2**

An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.

Sp Qtr. 12-hr cl. Prereq: CIS 612, Linguistics 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in CIS, Industrial Systems Engineering, Linguistics, Philosophy and Psychology.

**744 Clinical Seminar in Speech-Language-Hearing Disorders G 1**

Readings and discussion of topics pertinent to the assessment and treatment of communication disorders.

Su, Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 10 cr hrs; cr hrs in excess of 10 must be approved by the Graduate Studies Committee.

**744.01 Hearing Disorders**

Prereq: 540 or equiv or permission of instructor.

A— Introduction to Audiology Clinic

B— Speech and Voice of Hearing Impaired Persons— Evaluation and Treatment

C— Auditory Skills—Evaluation and Training

D— Hearing Aid Protocols

E— Language of Hearing Impaired Persons—Evaluation and Treatment

F— Professional Issues

G— Expanding Professional Roles and Responsibilities

**744.02 Speech Language Disorders**

Prereq: 3 cr hrs of sph/hrng course work at 600 level or above, or permission of instructor.

A— Fundamentals of Treatment Design

B— Treatment Methodologies for Articulation and Phonology

C— Language Sampling

D— Voice and Fluency Protocols

E— Analysis and Application of Voice and Fluency Techniques

F— Professional Issues

G— Expanding Professional Roles and Responsibilities

**750 Assessment of Vestibular Function G 3**

Study of the techniques involved in the administration and interpretation of electronystagmography, rotation, and posturography assessments.

Wi Qtr. Not open to students with credit for 940D.

**757 Physiological Acoustics G 3**

Physiological processes associated with human hearing with information on the acoustical, mechanical, technical, and electrophysiological events involved in the processing and coding of auditory stimuli.

Sp Qtr. Not open to students with credit for 857.

**H783 Honors Research U 3-15**

A program of independent study for the student with special aptitudes; individual conferences and reports.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the sph/hrng courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**794 Group Studies U G 3**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**820 Acoustic Phonetics G 3**

An introduction to the acoustic characteristics of human speech sounds, the acoustic theory of speech production, and spectrographic analysis.

Wi Qtr. Prereq: 245 and Linguist 601, or equivs. Not open to students with credit for this topic under 940 or 950.

**832\* Experimental Phonetics G 5**

Experimental investigations of acoustic, physiological, and psychological aspects of speech.

Sp Qtr. Repeatable to a maximum of 10 cr hrs.

**835 Digital and Digitally Programmable Hearing Aids G 5**

Description of true digital and analog/digital hybrid hearing aids and presentation of commercially available programmable instruments.

Sp Qtr. 2 2-hr cl. Prereq: 735.

**842 Adult Hearing Disorders G 5**

The nature, diagnosis, and treatment recommendations of adult hearing disorders.

Au Qtr. 1 3-hr cl. Prereq: 636 and 642.

**844 Practicum in Communication Disorders G 1-5**

Practicum with children and adults having speech, language, or hearing problems.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs in any combination of decimal subdivisions. These courses are graded S/U.

**844.01 Audiological Evaluation**

Prereq: 636 or permission of instructor.

**844.02 Audiological Habilitation**

Prereq: 632.

**844.03 Speech and Language Evaluation**

Prereq: 655 or permission of instructor.

**844.04 Speech and Language Management**

Prereq: Permission of instructor.

**845 Clinical Internship: Speech, Language, and Hearing G 12**

Full-time experience in approved clinical setting to partially fulfill requirements for Plan B nonthesis option.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Completion of 45 grad cr hrs and 40 hrs of clinical practicum. Prior approval of grad committee required. This course is graded S/U.

**846 Field Experience in the Schools G 6 or 12**

Major practicum experience for students pursuing certification to practice speech/language pathology in schools.

Wi, Sp Qtrs. Prereq: 670 or equiv, grad standing in sph/hrng, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

**858 Psychoacoustics G 5**

Theoretical concepts and psychophysical data relative to hearing and related laboratory experiments.

Au Qtr.

**870 School Internship Seminar G 3**

Special topics, management concerns, and other planned experiences relative to the school internship in speech-language pathology.

Au, Wi, Sp Qtrs. 1 2½-hr cl. Prereq: 670 and 770, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

**940 Advanced Studies in Speech and Hearing Science G 3**

Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.



**950 Seminar in Speech and Hearing Science G 3**

Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

**998 Research in Speech and Hearing Science: Thesis G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

**999 Research in Speech and Hearing Science: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Statistics

141 Cockins Hall, 1958 Neil Avenue, 292-2866

**133 Statistics for the Business Sciences U 4**

Introduction to the basic concepts of probability and statistics; sample statistics, discrete and continuous probability distributions; confidence intervals, and estimation.

Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: Math 132.

**135 Elementary Statistics U 5**

Introduction to probability and statistics, experiments, and sampling, data analysis and interpretation.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Math 050 or Mathematics Placement Level S. Not open to students with credit for any of the following: 125, Econ 442, Ed-T&P 786, Mol Gen 650, Polit Sc 685, Psych 220, 510, or Soc Work 570 or 571. GEC/LAR course.

**145 Introduction to the Practice of Statistics U 5**

Topics include probability, descriptive statistics, correlation, regression, design of experiments, sampling, estimation, and testing; emphasis on applications, statistical reasoning, and data analysis using statistical software.

Au, Wi, Sp Qtrs. 3 1-hr cl, 2 labs. Prereq: Math 104 or equiv. Not open to students with credit for 135. GEC/LAR course.

**245 Introduction to Statistical Analysis U 5**

Calculus-based introduction to data analysis, experimental design, sampling, probability, and inference.

Sp Qtr. 3 cl, 2 1-hr labs. Prereq: Math 152 or equiv. GEC course.

**421+ Introduction to Statistics U 5**

Combinatorial probability, fundamental concepts of probability distributions, sample statistics, estimation and testing hypotheses, roots of statistical theory.

Au Qtr. Prereq: Math 254 or written permission of chairperson.

**425 Probability and Statistics I U 5**

Elements of discrete and continuous probability; introduction to estimation and testing of hypotheses.

Wi, Sp Qtrs. Prereq: Math 254 or permission of chairperson. Not open to students with credit for 427. GEC course.

**426 Probability and Statistics II U 5**

Continuation of 425.

Au, Sp Qtrs. Prereq: 425. Not open to students with credit for 428.

**427 Introduction to Probability and Statistics for Engineering and the Sciences I U 3**

Introduction to probability, discrete and continuous random variables, expected value, and sampling distributions.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Math 254 or permission of chairperson. Not open to students with credit for 425. This course is not intended to stand alone as an introduction to probability and statistics. It should be followed by 428. GEC course.

**428 Introduction to Probability and Statistics for Engineering and the Sciences II U 3**

Continuation of 427; point and interval estimation; hypotheses tests for proportions, means, variances, and goodness-of-fit; least squares regression.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 427. Not open to students with credit for 426.

**494 Group Studies U 3-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**518+ Statistical Theory in Medical Research I U G 3**

Fundamental concepts of probability, random variables, statistical inference, regression and correlation analysis; topics selected from bioassay, life table techniques, computers in medicine.

Au Qtr. 3 cl. Prereq: Permission of instructor or grad students in medical sciences.

**519+ Statistical Theory in Medical Research II U G 3**

Continuation of 518.

Wi Qtr. 3 cl. Prereq: 518.

**520 Mathematical Statistics I U G 5**

Probability, random variables, discrete and continuous distributions; binomial, Poisson, normal, gamma (chi-square), t, F, distributions; change of variable and moment-generating function techniques; order statistics; limit theorems.

Au, Wi Qtrs. 5 cl. Prereq: Math 254 or written permission of chairperson. Not open to students with credit for 620. GEC course.

**521 Mathematical Statistics II U G 5**

Confidence intervals; minimum variance unbiased estimation, maximum likelihood estimation; Neyman-Pearson theorem, uniformly most powerful tests, likelihood ratio tests, chi-square and F tests, nonparametric tests.

Sp Qtr. 5 cl. Prereq: 520. Not open to students with credit for 621.

**525+ Statistical Methods U G 5**

Basic concepts of probability and statistical inference; application to models involving binomial, Poisson, and normal distributions, and linear regression.

Au Qtr. 5 cl. Prereq: Math 254 or equiv and permission of instructor; or Math 254 or equiv and grad standing.

**528 Data Analysis I U G 3**

Non-calculus treatment of descriptive statistics, statistical inference, goodness of fit, use of t,  $\chi^2$  in one sample situation.

Au, Wi Qtrs. 2 cl, lab hrs arr. Prereq: Permission of instructor or grad standing. Not open to students with more than 5 cr hrs in stat.

**529 Data Analysis II U G 3**

Two sample tests, non-parametric one and two sample procedures, regression analysis, one and two way analysis of variance.

Wi, Sp Qtrs. 2 cl, lab hrs arr. Prereq: 528.

**530 Data Analysis III U G 4**

Multiple regression models; diagnostics, inferences, and variable selection; ANOVA with several factors, mixed models, nesting.

Sp Qtr. 4 cl. Prereq: 529 or permission of instructor.

**600 Statistical Consulting I U G 2**

Role of statistical consultant; enhancement of problem solving and communication skills; development of a personal philosophy of consulting.

Wi Qtr. Prereq: 645 and permission of instructor. This course is graded S/U.

**601 Statistical Consulting II U G 2**

Experience is given the student in working with real data through association with projects in the Statistics Consulting Service.

Sp Qtr. 1 1/2-hr cl. Prereq: 600 and permission of instructor. This course is graded S/U.

**602 Early Start in Statistics G 5**

Selected mathematical topics, including geometric series, binomial expansion, integration by parts, Taylor series; transformation of variables, linear algebra, basic concepts of probability.

Su Qtr. 5 cl. Prereq: Grad standing in stat.

**603 Teaching of Statistics G 4**

Introduction to the teaching of statistics; teaching strategies; communicating with students; review of topics taught in Stat 133, 135, and 145, and the computing lab.

Su, Au Qtrs. 4 cl. Prereq: Grad standing in stat. This course is graded S/U.

**610 Probability for Statistical Inference G 5**

Introduction to probability, random variables, and distribution theory intended primarily for students in MAS degree program.

Au Qtr. 3 cl. Prereq: Math 548 or permission of instructor.

**620 Statistical Theory I G 4**

Introduction to probability, conditional probability, independence, random variables, distribution functions, transformations, moment generating function, common probability distributions; marginal and conditional distributions, sampling distributions; convergence concepts.

Au Qtr. 4 cl. Prereq: Math 548. Not open to students with credit for 610.

**621 Statistical Theory II G 4**

Sufficiency, maximum likelihood estimation, minimum variance unbiased estimation, Bayes estimation, decision theory.

Wi Qtr. 4 cl. Prereq: 620 or written permission of instructor.

**622 Statistical Theory III G 4**

Likelihood ratio tests, Neyman Pearson theorem and uniformly most powerful tests, confidence intervals, applications to linear models.

Sp Qtr. 4 cl. Prereq: 621.

**623 Theory of Statistical Analysis G 5**

Estimation, hypothesis tests, best tests, likelihood ratio tests, confidence sets, sufficiency, efficient estimators; intended primarily for students in the MAS degree program.

Wi Qtr. 3 cl. Prereq: 610 or 620 or permission of instructor. Not open to students with credit for 621 or 622.

**628 Introduction to Statistical Practice I G 3**

Overview of statistical problem formulation and inference; foundations of stochastic modeling; computers as statistical tools; exploratory data analysis; sampling; experimental design.

Au Qtr. 3 cl. Prereq: Grad standing in stat.

**629 Introduction to Statistical Practice II G 3**

Parametric, semiparametric, and nonparametric models for single populations; topics include linear and non-linear regression, generalized linear models, and multivariate analyses; model fitting, diagnostics, and inference.

Wi Qtr. 3 cl. Prereq: 628.

**630 Introduction to Statistical Practice III G 3**

Multiple population models; ANOVA and MANOVA; hierarchical and Bayesian models; classification; principal components; advanced techniques.

Sp Qtr. 3 cl. Prereq: 629.

**632 Applied Stochastic Processes I U G 3**

Conditioning, discrete time Markov chains, Poisson processes, branching process.

Wi Qtr. 3 cl. Prereq: 623 or permission of instructor.

**633\* Applied Stochastic Processes II U G 3**

Continuous time Markov chains, birth and death processes, renewal processes, Queueing Theory, Brownian Motion.

Wi Qtr. 3 cl. Prereq: 632 or permission of instructor.

**635 Statistical Analysis of Time Series U G 3**

Time series models; estimation of the spectral density function; transformations of time series; prediction theory applications.

Au Qtr. Prereq: 521 or 525 or 623 or permission of instructor.

**641 Design and Analysis of Experiments U G 3**

The linear model for experimental designs; analysis of variance; factorial experiments; and block designs.

Wi Qtr. 3 cl. Prereq: 521, 645, and knowledge of elementary linear algebra; or permission of instructor.

**645 Applied Regression Analysis U G 5**

Simple and multiple linear regression, diagnostics, model selection, models with categorical variables.

Au, Sp Qtrs. 3 cl. Prereq: 521 or equiv.

**651 Survey Sampling Methods G 3**

Sampling from finite populations, simple random, stratified, systematic, and cluster sampling designs, ratio and regression estimates; non-sampling errors.

Au Qtr. 2 cl. Prereq: 521.

**655\* Multivariate Data Analysis U G 5**

Graphical analysis of multivariate procedures, clustering and classification procedures, multivariate normal procedures, correlation and regression in multivariate analysis, modern data analytic techniques for multivariate data, applications.

Su Qtr. 5 cl. Prereq: 519, 529, or equiv.

**656\* Applied Multivariate Analysis U G 5**

Matrix computation of summary statistics, geometry of sample data; multivariate normal distribution; MANOVA; principal components; discriminant analysis; topics may include factor analysis, cluster analysis, canonical correlation.

Sp Qtr. 3 cl. Prereq: 645 or equiv and knowledge of linear algebra. Some experience with computers is expected.

**661 Applied Nonparametric Statistics U G 5**

Noncalculus treatment of nonparametric tests, confidence intervals, estimation; topics include one- and two-sample problems, one- and two-way analysis of variance, multiple comparisons, correlation.

Su, Sp Qtrs. 5 cl. Prereq: 426 or 521 or 529 or equiv.

**663\* Statistical Methods in Reliability U G 5**

Statistical failure models, graphical and analytic parametric estimation for censored samples, non-parametric survival function estimation, reliability of composite and repairable systems, Bayesian estimation and prediction.

Sp Qtr. 3 1/2-hr cl. Prereq: 521 or 623 or equiv.

**664 Principles of Statistical Quality Control U G 5**

Pareto diagrams; process control: Shewhart, CUSUM, empirical Bayes, multivariate and other control charts; economic design, process capability, Taguchi's method for off-line control; acceptance sampling.

Wi Qtr. 3 cl. Prereq: 521 or 623 or equiv.

**665 Discrete Data Analysis U G 4**

Two-by-two tables; cross-sectional, prospective, and retrospective studies; log linear model analysis of cross-classified data; logistic regression analysis; analysis of stratified tables.

Sp Qtr. 2 cl. Prereq: 529 or 645 or permission of instructor.

**672\* Simulation Techniques U G 3**

Random number generation, univariate and multivariate random variable generation, variance reduction, output analysis.

Wi Qtr. 3 cl. Prereq: 623 or equiv or permission of instructor. Not open to students with credit for 671. Some knowledge of computing programming is required.

**673 Monte Carlo Techniques U G 3**

This course covers the Monte Carlo topics of Stat 671.

Au Qtr. 3 cl. Prereq: 425 or 520 or 525 or 529 or equiv and some knowledge of computer programming, or permission of instructor. Not open to students with credit for 671.

**693 Individual Studies U G 1-5**

Individual conferences, assigned readings, and reports on minor investigations.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 2-5**

Designed to give groups of students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**720\* Distribution Theory G 3**

Characterizing functions, compound and contagious distributions, families and systems of distributions; some discrete and continuous distributions, characterizations.

Wi Qtr. 3 cl. Prereq: 610, 620 or permission of instructor.

**722 Theory of Probability I U G 4**

Measure and integration; random variables; convergence in probability, almost everywhere, in the mean; weak convergence of measures.

Au Qtr. 4 cl. Prereq: Math 653. Not open to students with credit for Math 722. Cross-listed in Mathematics.

**723 Theory of Probability II U G 4**

Conditioning and sufficient statistics; laws of large numbers; central limit theorem; random walks; Laplace transforms and renewal processes.

Wi Qtr. 4 cl. Prereq: 722 or Math 722. Not open to students with credit for Math 723. Cross-listed in Mathematics.

**725\* Sequential Statistical Methods G 3**

Two-stage designs; Wald's SPRT, its characteristics and generalizations; Cox's theorem; group-sequential designs; Bayes sequential decisions, sequential estimation, and fixed-width interval estimates; optimal stopping rules.

Wi Qtr. 3 cl. Prereq: 622 or 623.

**742 Analysis of Variance U G 3**

Theory of the general linear model; least square estimates and properties, especially in non-full rank models; analysis of variance technique; factorial designs.

Au Qtr. 3 cl. Prereq: 521 or 623, and Math 471 or 601.

**745\* Multiple Comparisons Procedures G 3**

Types and levels of multiple comparison inference, abuses, sample size computation, graphical representation.

Sp Qtr. 3 cl. Prereq: 742 or permission of instructor.

**746 Design and Analysis of Experiments U G 3**

A continuation of 742; various experimental designs; analysis of covariance, mixed and random models.

Wi Qtr. 2 cl. Prereq: 742.

**755 Multivariate Analysis I G 3**

Geometrical representations of data; random vectors, normal distribution for random vector and random data matrices, Wishart distribution, inferences based on normal theory.

Wi Qtr. 2 cl. Prereq: 521 or 623, and Math 471 or 601.

**756 Multivariate Analysis II G 3**

Multivariate regression analysis; principal component analysis; factor analysis; canonical correlation analysis; discriminant analysis--all from a theoretical point of view.

Sp Qtr. 2 cl. Prereq: 755.

**761 Nonparametric Statistics I G 3**

Order statistics, equal in distribution technique, counting and ranking methods, distribution-free statistics, Monte Carlo power simulation studies, asymptotic relative efficiency.

Au Qtr. 3 cl. Prereq: 622 or 623.

**763 Nonparametric Statistics II G 3**

Distribution-free confidence intervals, Hodges-Lehmann estimators, robust estimation, linear rank statistics; distribution-free tests: alternative methods for constructing distribution-free statistics.

Wi Qtr. 3 cl. Prereq: 761.

**764\* Order Statistics U G 4**

Distribution theory in continuous and discrete cases, moments, order statistics in statistical inference, asymptotic theory.

Sp Qtr. 4 cl. Prereq: 622 or permission of instructor.

**777\* Optimizing Methods in Statistics U G 3**

Survey of classical optimizing techniques with applications in statistics, mathematical programming and constrained estimation, variational methods and dynamic programming applied to statistical problems, miscellaneous applications.

Wi Qtr. 3 cl. Prereq: Permission of instructor.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and cumulative pt-hr ratio commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**801 Seminar on Research Topics in Statistics G 2**

Lectures on current research by each graduate faculty member in statistics.

Au Qtr. 1 2-hr cl. Prereq: 2nd yr standing in stat PhD program or permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

**821 Statistical Inference I G 3**

Classical and modern statistical inference from advanced point of view, estimation, principles of maximum likelihood, asymptotic theory; completeness, sufficiency and invariance.

Wi Qtr. 3 cl. Prereq: 623 and Math 722.

**822 Statistical Inference II G 3**

Sp Qtr. 3 cl. Prereq: 821.

**824† Statistical Decision Theory I G 3**

Introduction to the theory of games, statistical games, admissibility and completeness, complete class theorem, principles of sufficiency and invariance, sequential games.

Au Qtr. 3 cl. Prereq: Permission of instructor.

**825\* Statistical Decision Theory II G 3**

Continuation of 824.

Wi Qtr. 3 cl. Prereq: 824.

**832 Applied Probability Models G 3**

Birth and death processes, Queueing Theory, Branching processes and other applied probability models.

Wi Qtr. 3 cl. Prereq: Math 722.

**834 Statistical Inference for Stochastic Models G 3**

Theory of statistical inference for Markov chains and other applied probability models.

Sp Qtr. Prereq: 832.

**847\* Advanced Design of Experiments G 3**

Partially balanced designs, factorial experiments, confounding and fractional replications, response surface designs.

Sp Qtr. Prereq: 746.

**881 Advanced Topics in Mathematical Statistics I G 3**

Topics to be taken from the following: multivariate analysis, stochastic processes, analysis of variance, components of variance models, advanced test design.

Su, Au, Wi Qtrs. 3 cl. Prereq: Grad standing in stat. Repeatable to a maximum of 9 cr hrs.

**882 Advanced Topics in Mathematical Statistics II G 3**

Continuation of 881.

Su, Wi, Sp Qtrs. 3 cl. Prereq: Grad standing in stat. Repeatable to a maximum of 9 cr hrs.

**888\* Large Sample Theory G 3**

Mann-Wald theory of stochastic order relationships; asymptotic distribution of maximum likelihood estimates and likelihood ratio statistic, large deviation theory, asymptotic theory of well-known statistics.

Sp Qtr. 3 cl. Prereq: 822.

**893 Advanced Individual Studies G 1-5**

Individual conferences, assigned readings, and reports on investigations.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**894 Advanced Group Studies G 1-5**

Designed to give groups of advanced students an opportunity to pursue special studies not otherwise offered.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

**895 Statistics Seminar G 1**

Topics range over the current research interests of statisticians from around the world; some lectures are of an expository nature.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**999 Research G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Surgery

N-747 Doan Hall, 410 West 10th Avenue, 293-8701

**790 Research Studies in Surgery P 6, 12, 18 G 3-5**

1, 2, 3, or 4 months (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs for grad credit. This course is graded S/U.

**790.08 Plastic Surgery**

1, 2, 3, or 4 months; offered all months. Repeatable to a maximum of 24 cr hrs for professional credit.

**791 Clinical Studies in Surgery**

Prereq: Permission of instructor.

**791.07 General Surgery P 12 or 24**

Offered all months. Repeatable to a maximum of 24 cr hrs.

**791.09 Thoracic Surgery P 6**

1 month, offered all months.

**999 Research in Surgery G Arr**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Surveying

404 Cockins Hall, 1958 Neil Avenue, 292-6753

**203 Introduction to Surveying U 3**

Basic surveying concepts; surveying instrumentation; the art of field data acquisition; planning and execution of field surveys; applications to professional surveying practice, engineering, and other disciplines.

Au Qtr. 2 cl, 1 3-hr lab. Prereq or concur: Math 151; or written permission of instructor. Not open to students with credit for 201 or 302.

**301 Surveying Measurements and Computations U 4**

Surveying measurement theory; analysis of measurements; computation and adjustment on a plane, with PC applications.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 203; prereq or concur: Math 152 and En Graph 166.

**403 History of Surveying and Mapping U 3**

History of Earth measurement and methods; historical connections with other sciences; history of land survey systems in the U.S.; milestones in technology; and associations.

Au Qtr. 3 cl.

**407 Construction Surveying U 4**

Route surveying and geometric design; topographic site surveys and mapping; civil engineering and construction surveys; earthwork computations; layout of industrial plants, buildings, cables, pipelines, and manufacturing machinery.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 301 or Civil En 202 or 402.

**450 Surveying Data Adjustment and Analysis U 5**

Review of statistical concepts; propagation of variances and covariances; least squares adjustment of problems in surveying; analyses of results from least squares adjustments; hypothesis testing.

Sp Qtr. 4 cl, 1 3-hr lab. Prereq: Math 568.

**506 Introduction to Photogrammetry U G 4**

Basic concepts of photogrammetry: optical, photographic, mathematical, and geometric principles relevant to photogrammetry; data-acquisition systems; theory and procedures of stereoscopic mapping; and map compilation using analog stereo-plotters.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 301 or Civil En 202 or 402; and prereq or concur: Math 153 or Physics 133 or permission of instructor.

**507 Land Subdivision Analysis U G 3**

Process of subdividing and platting land; analysis of soils, topography, terrain, earthwork, geometry, and other variables for land subdivision; plat preparation; layout of development plans.

Sp Qtr. 3 cl. Prereq: 407 and Civil En 510 or equiv.

**509 Surveying Astronomy U G 3**

Celestial sphere and its coordinate systems; sidereal, universal, and atomic time; time conversions; ephemerides; instrumentation for astronomical observations in surveying; determination of azimuth, latitude, and longitude.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 511.

**510 Topics in Professional Practice U G 2**

Topics in applicational areas of surveying from the point of view of the practitioner and the consumer of land-related data.

Sp Qtr. 1 2-hr cl. Prereq: 301.

**511 Geodetic Control Surveying U G 4**

Overview of geodetic surveying; modern methods and instrumentation in control surveys; standards and specifications horizontal and vertical control; data as infrastructure of LIS and GIS.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 407 or equiv or grad standing in geod sci or permission of instructor. Not open to students with credit for 508.

**515 Photogrammetric Mapping and Surveying U G 4**

Photogrammetric aerial triangulation; analytical point positioning applications to terrestrial photogrammetry and camera calibration; computer controlled systems; data capture for digital elevation models; orthophotography; mapping with space systems; digital photogrammetry.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 450, 506, 511, or permission of instructor.

**524 Boundary Location Principles U G 4**

Land surveyor's role; analysis of evidence and procedures for boundary locations; retracement principles for sequence; simultaneous and public surveys; laws on surveying practices.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 301 and 403.

**606+ Surveying Projects U G 5**

Planning, execution, and analysis of surveying projects, integrating background in geodetic, engineering, photogrammetric, cartographic, and land surveying; oral, written, and graphical presentation of complete projects.

Su Qtr. 5 4-hr labs. Prereq: 407, 509, 515, and 524.

**609 Surveying with Satellites U G 3**

Surveying with Earth artificial satellites, global positioning system, relative positioning using interferometric techniques, kinematic surveying.

Wi Qtr. 2 cl, 1 3-hr lab. Prereq: 450 and 511.

**625 Cadastral Information Systems U G 4**

Land tenure, evolution of the cadastre, and its relation to land rights; components of multipurpose cadastre, conceptual models, design, implementation problems, future outlooks, and land information systems.

Sp Qtr. 3 cl, 1 3-hr cl. Prereq: 524 or permission of instructor. Not open to students with credit for 525.

## Swahili

486 University Hall, 230 North Oval Mall, 292-3700

**101 Elementary Swahili I**

Development of basic listening, speaking, and reading skills using a competency-based curriculum.

Au, Wi, Sp Qtrs. Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR courses. FL Admis Cond courses.

**101.01 Classroom Track U 5**

Students must register for and complete 5 or hrs during the qtr. This course is available for EM credit.

**101.51 Individualized Track U 1-5**

Prereq: Permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from 1 cr hr to the next with proficiency at the level of 80% required for advancement.

**102 Elementary Swahili II**

Continuation of 101; further work on basic listening, speaking, and reading skills using a competency-based curriculum.

Au, Wi, Sp Qtrs. Not open to students with credit for 102, or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR courses. FL Admis cond courses.

**102.01 Classroom Track U 5**

Prereq: 101 or 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

**102.51 Individualized Track U 1-5**

Prereq: Grade of B+ or above in 101.01 or 5 cr hrs of 101.51 or permission of instructor. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students register for and complete from 1-5 cr hrs during the qtr. Progress is sequential from 1 cr hr to the next with proficiency at the level of 80% required for advancement.

**103 Intermediate Swahili I U 5**

Further development of listening, reading, speaking, and writing skills; readings based on Swahili culture and literature.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 102 or 102.01 or 102.51. Not open to students with credit for Black St 203; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course.

**104 Intermediate Swahili II U 5**

Balanced use of basic language skills; emphasis on speaking and aural comprehension; further exposure to Swahili culture through reading of current newspapers, short stories, plays, and novels.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 103 or equiv. Not open to students with credit for Black St 204; or to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course.

**401+ Advanced Swahili Grammar U 5**

Review of fundamental principles of grammar and syntax; exercises in Swahili.

Wi Qtr. 5 cl. Prereq: 104 or permission of instructor.

**402+ Advanced Swahili, Grammar and Composition U 3**

Introduction to advanced Swahili composition and grammar.

Sp Qtr. 3 cl. Prereq: 401 or permission of instructor.

## Swedish

314 Cunz Hall, 1841 Millikin Road, 292-6985

**101 Elementary Swedish I****101.01 Classroom Track U 5**

Development of aural comprehension, speaking, reading, and writing skills.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR course. No audit.

**102 Elementary Swedish II****102.01 Classroom Track U 5**

Continuation of development of aural comprehension, speaking, reading, and writing skills.

Wi Qtr. 5 cl. Prereq: 101.01 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. No audit.

**103 Intermediate Swedish I****103.01 Classroom Track U 5**

Balanced use of basic language skills; review of aural comprehension basics, speaking, reading, and writing.

Sp Qtr. 5 cl. Prereq: 102.01 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. No audit.

**104 Intermediate Swedish II****104.01 Classroom Track U 5**

Conclusion of intermediate Swedish; extensive practice in spoken and written Swedish.

Au Qtr. 5 cl. Prereq: 103.01 or equiv; or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. No audit.

**201 Swedish Conversation and Composition U 5**

Practice in basic written and spoken Swedish, emphasis on study of word forms and sentence structure, themes and oral presentations on topics of everyday life.

Wi Qtr. 5 cl. Prereq: 104 or equiv or permission of instructor. No audit.

**293 Individual Studies U 2-5**

Independent study of advanced Swedish language texts not covered in other course offerings.

Au, Wi, Sp Qtrs. Prereq: 104 or equiv or permission of instructor. Repeatable to a maximum of 10 cr hrs. Taught in Swedish. This course is graded S/U.

**294 Group Studies U 2-5**

Special topics to be announced in the quarter previous to the one in which the course is offered.

Wi, Sp Qtrs. 2-5 cl. Prereq: 104 or equiv or permission of instructor. Repeatable to a maximum of 15 cr hrs. Taught in Swedish.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

## Textiles and Clothing

262 Campbell Hall, 1787 Neil Avenue, 292-8063

**270 Aesthetics of Dress U 3**

Effects of aesthetic norms, color psychology, body image, personality expression, and professional orientation on the perception and presentation of appearance products in a social context.

Au, Wi Qtrs. 3 cl and arranged labs. This course is available for EM credit. VPA Admis Cond course.

**272 Clothing and Humanity U 3**

Emphasis is placed on the significance and use of textiles and clothing to individuals and families in contemporary society.

Au, Sp Qtrs. 3 cl. Prereq: 5 cr hrs of sociol or psych. SS Admis Cond course.

**275 The Business of Fashion: From Concept to Consumer U 3**

Survey of supply, manufacture, distribution, and auxiliary industries impacting the production, distribution, and sale of textiles and apparel products; fashion terminology, creators, and careers.

Au, Sp Qtrs. 3 1-hr cl. Not open to students with credit for 570.

**289 Introductory Field Experience U 3 or 5**

Ten weeks' practical experience or equivalent in approved retail establishment or other enterprise related to student's major interest.

Su, Au, Wi, Sp Qtrs. Prereq: 2.00 CPHR, minimum of 9 cr hrs in major; written permission of instructor. Open to txtl&clo majors only. This course is graded S/U.

**294 Group Studies U 2, 3, or 5**

Selected topics in textiles and clothing.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**370 Fashion Design and Illustration U 3**

Creative approach to the study of clothing through fashion illustration and costume design; student will be prepared to communicate fashion information in various ways.

Wi Qtr. 3 2-hrs lab. Prereq: 270 or equiv with written permission of instructor; 3rd yr standing.

**371 Textiles I U 5**

Fiber properties, yarn, and fabric construction color, and finishes as they relate to performance, care, and consumer satisfaction.

Au, Wi Qtrs. 4 cl, 1 2-hr lab. Prereq: 2nd yr standing.

**375 Ready-to-Wear Analysis U 3**

Examination and evaluation of ready-to-wear apparel and its details for construction, style, quality, and fit.

Au, Wi Qtrs. 3 cl. Prereq: 270 and 371.

**485 Merchandise Buying U 3**

Buyer's role in merchandise management and decision-making, planning, and control processes; merchandise resources and negotiating; and pricing and preparing merchandise for sale.

Wi, Sp Qtrs. 3 1-hr cl. Prereq: 272, 275, 375, Acct&MIS 211, or permission of instructor. Not open to students with credit for 570.

**571 Textile Analysis and Evaluation U 5**

Experience in planning and conducting textile tests and in analysis and interpretation of test data, standards and specifications, and quality assurance in textile and apparel industries.

Au, Sp Qtrs. 4 1-hr cl, 1 2-hr lab. Prereq: 371, Chem 102, Stat 135 or 133.

**576 Global Patterns and Issues in Textiles and Apparel Trade U 3**

International factors affecting the textiles and apparel industries and their impact on the economy and consumers.

Wi Qtr. 2 1½-hr cl. Prereq: 275, 371 and Econ 400 or permission of instructor.

**589 Field Work U 15**

One qtr supervised experience at a dept-approved intern site related to student's selected option in txtl&clo; investigation and analysis of assigned problems.

Su, Au Qtrs. Prereq: 2.5 cum pt-hr ratio, 4th yr standing, 595, 16 hrs in major, 7 hrs in supporting area, txtl&clo faculty recommendation, and written permission of instructor. Open to txtl&clo majors only. No other courses may be taken nor any other jobs held for the duration of the internship. Au Qtr interns must work through Dec 24. Autumn Retail Merchandising intern grades will be deferred to Wi Qtr. This course is graded S/U.

**590 Practicum in Textiles and Clothing Research U 1-5**

Provides students with the opportunity to work individually with a faculty member on a research project.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**593 Individual Studies U 1-5**

Problems in various phases of textiles and clothing related to individual's program.

Su, Au, Wi, Sp Qtrs. Regular conferences. H593 (honors) may be available to students enrolled in college honors program or eligible for enrollment. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**595 Professional Development in Textiles and Clothing U 2**

The professional: career opportunities and goals, position securement, professional organizations, and continued personal development.

Wi, Sp Qtrs. 2 cl. Prereq: 270, 275, 3rd yr standing in txtl&clo. Recommended: 595 not to be taken more than 3 qtrs prior to 589.

**672 History of Costume and Textiles U G 5**

A chronological study of costume and textiles from ancient civilization to modern times, with consideration of cultural forces that affected the development.

Au, Wi Qtrs. 5 cl. Prereq: 371 and 3rd yr standing.

**675 Fashion Analysis U 3**

An examination of fashion theories and the evolution of fashion in the 20th century applied to the merchandising of fashion.

Wi, Sp Qtrs. 3 cl. Prereq: 275 or 570, and 672.

**678† Preservation and Restoration of Historic Textiles and Apparel U G 3**

Study of techniques and procedures to preserve and restore textiles and apparel of historic value.

Su Qtr. 1 2-hr cl, 2 2-hr labs and arr hrs. Prereq: 10 cr hrs in 600 level and above textiles and clothing courses or equiv.

**690 Workshop U G 1-4**

Intensive study of a topic of common concern to the participants for 1 to 3 weeks. May be an off-campus or an on-campus full-time group meeting.

Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs. Travel and subsistence costs for off-campus workshops will be borne by the student. These courses are graded S/U.

**690.01 Textiles****690.02 Clothing****690.03 Merchandising****694 Group Studies U G 1-5**

Selected topics in textiles and clothing.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour u G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign**

**698.03 New York U 2**

Concentrated on-site study of the fashion industry and apparel market with tours of laboratories, designer's workrooms, buying offices, and other related apparel/textile organizations.

Sp Qtr. Prereq: 19 cr hrs of txt&clo courses. The workshop will occur during the week preceding the qtr the course is offered. Students are required to attend preparation meetings the qtr prior to the tour. Open only to txt&clo majors. Application deadline is first week of Wi Qtr.

**751\* Textile Fiber Chemistry U G 3**

Study of physical and chemical properties of polymers, polymerization processes, and the physical and chemical properties of polymeric textile fibers.

Wi Qtr. 2 1½-hr cl. Prereq: 571, or permission of instructor.

**752\* Textile Fiber Physics U G 3**

Study of the physical properties of fibrous polymers, the morphological arrangement of these polymers, the relationship between microstructure and fiber properties.

Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 371, 571, Chem 102, or equiv. Either 751 or 752 is required in the Master's program.

**772\* Costume and Culture U G 3**

National and regional dress in relation to culture, available resources, and technology.

Sp Qtr. 2 1½-hr cl. Prereq: 10 hrs at the 600 level and above, or written permission of instructor.

**777 Research in Textiles, Apparel, and Merchandising U G 3**

1 3-hr cl. Not open to students with credit for 877.

**777.01 Literature Review**

An introduction to the literature in textiles, apparel, and merchandising with emphasis on the substantive content and scope of the research.

Au Qtr. Prereq: Grad standing or permission of instructor.

**777.02 Methods**

Introduction to methods currently in use in textiles, apparel, and merchandising research, with emphasis on the research process and proposal writing.

Wi Qtr. Prereq: 777.01, or equiv with written permission of instructor.

**793 Individual Studies U G 1-5**

Problems in various phases of textiles and clothing related to individual's program.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**851\* Textile Fiber Microscopy G 3**

Study of the principles and techniques of microscopy with particular attention given to the methods used in the examination of textile fibers.

Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 751 or 752, Chem 102 or permission of instructor.

**852\* Textile Dyeing G 3**

Study of the chemistry of dyes, the theory of dyeing and the dyeing process, the application of dyes, and the evaluation of dyed textiles.

Sp Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 751, or permission of instructor.

**870\* Theories of Fashion G 3**

Theories underlying fashion change, and an analysis of fashion as a social and economic force.

Wi Qtr. 2 1½-hr cl or 1 2½-hr cl. Prereq: Research methods or written permission of instructor; 12 cr hrs at the 600 level and above.

**874 Aesthetics: Appearance Management and Self Presentation G 3**

The aesthetics of dress as a medium of visual communication with analysis of appearance management strategies employed in the social presentation of self.

Sp Qtr. 2 1½-hr cl. Prereq: 1 course in social psychology and 1 course in art; 777.01 and 777.02.

**875\* Social Psychological Aspects of Clothing G 3**

A study of dress and adornment as they relate to human behavior.

Sp Qtr. 2 1½-hr cl or 1 2½-hr cl. Prereq: Research methods, 12 cr hrs at the 600 level and above, or written permission of instructor.

**876\* Textiles and Clothing Industries: Economic Appraisal G 3**

Impact of the textiles and clothing industries on the consumer and the economy.

Wi Qtr. 1 2½-hr cl. Prereq: 571 or 670; Econ 400 or equiv; or written permission of instructor.

**877 Advanced Research Methods in Textiles and Clothing G 3**

Research strategies and methodologies, with focus on paradigms and procedures and the assumptions underlying them, data analysis, and interpretation.

877.01 and 877.02 will be offered in alternate years.

**877.01\* Quantitative Research Methods in Textiles and Clothing**

Study of research in Textiles and Clothing, focusing on experimental design, model building, and data analysis and interpretation, including regression, correlation, and analysis of variance.

Au Qtr. 2 1½-hr cl. Prereq: 777.02, Stat 529, or permission of instructor.

**877.02\* Qualitative Research Methods in Textiles and Clothing**

Exploration of qualitative research methodologies, with emphasis on epistemological assumptions and interpretation.

Su Qtr. 1 2½-hr cl. Prereq: 777.02 or equiv.

**878\* History of Textiles G 3**

The development of textiles in prehistoric, ancient, medieval, and modern history, with special emphasis on Western European textiles.

Su Qtr. 1 2-hr cl, hrs arr. Prereq: 672 or written permission of instructor.

**879 Current Topics in Textiles and Clothing G 1-3**

Analysis of current developments, issues, and trends in textiles, clothing, and merchandising; topics to be announced.

Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: 12 cr hrs at the 600 level and above, including research methods; or written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**879.01 Textiles****879.02 Clothing****879.03 Merchandising****880\* Semiotics of Apparel and Related Consumer Products G 3**

Study of sign systems and the production of meaning applied to apparel, appearance, and related products.

Wi Qtr. 1 2½-hr cl. Prereq: Grad standing.

**889 Practicum in Research in Textiles and Clothing G 1-5**

Participation in the research process under the supervision of a faculty member.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing, a research methods course, e.g. 772.02 or equiv, and permission of instructor. Repeatable to a maximum of 15 cr hrs. A maximum of 5 cr hrs may be included in student's Program of Study. Graded S/U.

**894 Group Studies G 2, 3, or 5**

Selected topics in textiles and clothing.

Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

**993 Individual Studies G 1-5**

Problems in various phases of textiles and clothing related to individual's program.

Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**998 Research: Thesis G Arr**

Research for master's thesis.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**999 Research: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Theatre

1089 Drake Union, 1849 Cannon Drive, 292-5821

**100 Introduction to Theatre U 5**

A study of the theatre with emphasis upon its cultural and social influences in our society.

Su, Au, Wi, Sp Qtrs. H100 (honors) may be available to students enrolled in an honors program or by permission of dept. BER/GEC/LAR course. VPA Admis Cond course.

**205 Technical Production Practicum U 1**

Provides experience in technical production activities.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. VPA Admis Cond course.

**210 Fundamentals of Script Analysis U 3**

Fundamental principles for intensive study of the playscript as the basis of production.

Wi, Sp Qtrs. Prereq: 100. VPA Admis Cond course.

**220 Technical Production Fundamentals I U 3**

Basic aspects of scenery design construction; theory, process, equipment, materials, and skills.

Su, Au Qtrs. 2 cl, 2 lab hrs. VPA Admis Cond course.

**221 Technical Production Fundamentals II U 3**

Basic aspects of lighting design and technology, theory, process, equipment, materials, and skills.

Wi, Sp Qtrs. 2 cl, 2 lab hrs. VPA Admis Cond course.

**222 Technical Production Fundamentals III U 3**

Basic aspects of costume design and construction; equipment, theory, process, equipment, materials, and skills.

Sp Qtr. 2 cl, 2 lab hrs. VPA Admis Cond course.

**271 Great Ages of the Theatre U 5**

Concepts and characteristics of the great periods of the theatre of the western world.

Au, Wi, Sp Qtrs. H271 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: English 110 or 111 or equiv. Fulfills in part the ASC/LAR advanced English composition requirement. BER/GEC/LAR course. VPA Admis Cond course.

**280 Acting Fundamentals I U 3**

Basic acting techniques; imagination, concentration, human psychology as applied to creation of character and development of stage presence.

Au, Wi, Sp Qtrs. 4 lab hrs. VPA Admis Cond course. BER/GEC/LAR course.

**310 Stage Directing U 3**

Techniques of play analysis, interpretation, composition, movement, rhythm and tempo; their integration in stage direction.

Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 210, 280, and jr standing.

**353 Stage Makeup U 3**

Practical application of the theories and techniques of theatrical makeup and presentational theatre styles.

2 3-hr labs. Not open to students with credit for 250 or 251.

**367 Theatre Writing Courses U 5**

Study of theatre history at an intermediate level with emphasis on writing skills.

5 cl or 2 2 1/2-hr cl. Prereq: English 110 or 111 or equiv, and soph standing. GEC/LAR courses.

**367.01 Self Images: America on Stage, 1830 to the Present**

Exploration of the images of Americans presented on popular stages through written analysis of theatrical and critical texts.

Au, Wi, Sp Qtrs. Not open to students with credit for 367.

**367.02 African American Theatre History**

Examination of the aesthetic and sociological evolution in America of African American theatre and its literature.

Au Qtr. Not open to students with credit for Black St 367.02. Cross-listed in Black Studies.

**380 Acting Studio IA U 3**

Studio in acting focusing on the principles of Stanislavsky in rehearsed scenes.

Au Qtr. 3 2-hr cl. Prereq: 280, 383, 386, and written permission of instructor.

**381 Acting Studio IB U 3**

Studio in acting focusing on the special challenges of acting in Shakespeare's plays.

Wi Qtr. 3 2-hr cl. Prereq: 280, 383, 386 and written permission of instructor.

**382 Acting Studio IC U 3**

Studio in acting focusing on the use of improvisation as a technique for exploring rehearsed scenes.

Sp Qtr. 3 2-hr cl. Prereq: 280, 383, 386 and written permission of instructor.

**383 Speech and Voice Studio I U 3**

Basic study and training in voice production, phonetic transcription, and vocal expressiveness.

Au, Wi, Sp Qtrs. Prereq: 280.

**384 Speech and Voice Studio II U 2**

Introduction to phonetics: emphasis on shaping sound.

Wi Qtr. 4 cl. Prereq: 383.

**385 Speech and Voice Studio III U 2**

Individual voice problems: phonetic transcription and sound appreciation.

Sp Qtr. 4 cl. Prereq: 384.

**386 Stage Movement Studio I U 3**

Fundamentals of movement training; particular attention on physical awareness, body alignment, and physical principles of acting.

Au, Wi, Sp Qtrs. 4 cl. Prereq: 280.

**387 Stage Movement Studio II U 2**

Introduction to mask work: continuation of 386.

Wi Qtr. 4 cl. Prereq: 386.

**388 Stage Movement Studio III U 2**

Introduction to stage combat: continuation of 387.

Sp Qtr. 4 cl. Prereq: 387.

**405 Theatre Practicum II U 1-3**

Provides experience in theatrical performance and production activities at an intermediate level.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs in any combination of decimal subdivisions.

**405.01 Stage Direction/Management****405.02 Technical Production****405.04 Stage Design****405.05 Costuming/Makeup****405.08 Acting****405.09 Theatre Management****405.10 General****405.12 Lighting****460 Seminar in Theatre U 3**

Study and examination of the arts of the theatre and their interrelationships as they are used to interpret man and society, past and present.

Sp Qtr. 3 cl. Prereq: Sr standing in theatre. GEC/LAR course.

**494 Group Studies U 1-3**

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**531 Theatre Repertory I U G 3**

Survey of representative world drama from classical Greece to the 17th century.

Au Qtr. 3 cl. BER/LAC course.

**532 Theatre Repertory II U G 3**

Survey of representative western drama from the 17th century through the rise of realism.

Wi Qtr. 3 cl. BER/LAC course.

**533 Theatre Repertory III U G 3**

Survey of representative western drama since the rise of realism.

Sp Qtr. 3 cl. BER/LAC course.

**600 Professional Aspects of Theatre U G 3**

Study of the professional theatre as a business; contracts, unions, the theatre marketplace; preparation of resumes, portfolios, audition pieces, interview.

Au Qtr. 3 cl. Prereq: 4th yr standing in theatre or final yr of grad study.

**601 Theatre Management U G 3**

Principles, practices, and techniques of theatre management and a survey of modern management techniques.

Sp Qtr. Prereq: 220 and 221; or-equivs.

**602 Stage Management U G 3**

Principles, practices, and techniques of stage management, and a survey of modern management techniques.

Au Qtr. 2 2-hr cl. Prereq: 220 and 221. Not open to students with credit for 601 prior to Au Qtr 1994.

**610 Advanced Stage Directing U G 3**

Principles, techniques, and practice of advanced direction and integration of technical elements in theatrical production.

Sp Qtr. 2 2-hr cl. Prereq: 310 or equiv and permission of instructor.

**621 Theatre Graphics U G 3**

Technical and design graphics, and drafting procedures for production of scenery and lighting designs.

Sp Qtr. 1 2-hr cl. Prereq: 220 or permission of instructor.

**622\* Metals as a Scenic Element U G 3**

Introduction to metal products and fabrication techniques for scenery and properties.

Wi Qtr. 3 cl. Prereq: 220.

**623\* Advanced Technical Production U G 3**

Consideration of methods and materials for stage rigging, mechanics, and non-traditional scenic materials.

Sp Qtr. Prereq: 341 or permission of instructor.



**624\* Technical Direction U G 3**

Study of technical direction and production management; budget, personnel, schedule, other logistic problems in technical production.

Sp Qtr. 3 cl. Prereq: 220, 221, and written permission of instructor.

**625 Lighting Design I U G 3**

A study of light as a design element for theatrical performance and cinematography; analysis and preparation of designs for theatre and film applications.

Au Qtr. Prereq: 220 and 221.

**626\* Theatre Sound Techniques U G 3**

A survey of equipment and operational techniques used to provide sound support for theatrical productions.

Wi Qtr. 2 2-hr cl, 20 lab hrs arr. Prereq: 221.

**631 Cinema Production I U G 5**

Principles and procedures in 16 mm camera production, including camera, scripting, lighting, editing, and sound; emphasis on film as a form of visual expression.

Au Qtr. 1 2-hr cl, 2 2-hr labs. Not open to students with credit for Photog 551. Students must have own exposure meter.

**632 Cinema Production II U G 5**

Intermediate 16 mm film production; introduces lip-sync sound recording, advanced cinematography and post-production procedures, including the mix and release printing to film or video.

Wi Qtr. 2 2-hr cl. Prereq: 631. Not open to students with credit for Photog 553.

**633 Editorial Process U G 5**

Introduces theoretical and procedural basis for montage, controlling cinematic time, and understanding relationship of sound to image, including digital audio post-production.

Wi Qtr. 2 2-hr cl. Prereq: 631. Not open to students with credit for Photog 555.

**634 Video Production I U G 5**

An introduction to creative single camera video production--emphasis on performance, staging, and editing short video productions.

Au, Wi Qtrs. 2 2-hr cl. Prereq: Written permission of instructor. Not open to students with credit for Photog 661.

**635 Video Production II U G 5**

Continued exploration of creative single camera video production; topics may include documentary, drama, and experimental.

Sp Qtr. 2 2-hr cl. Prereq: 634 and written permission of instructor. Not open to students with credit for Photog 662.01, 662.02, and 662.03. Repeatable to a maximum of 10 cr hrs.

**636 Screenwriting U G 5**

Exploration of creative script-writing for video/cinema; development of short or feature length scripts.

Wi Qtr. 2 2-hr cl. Prereq: Written permission of instructor. Not open to students with credit for Photog 560.

**640 Decorative Arts for Theatre U G 3**

Survey of ancient to modern decorative arts and their adaptation to stage use, with emphasis on interiors, furniture, textiles, and colors.

Wi Qtr.

**641 Stage Design Media U G 3**

Techniques of rendering for stage design in various media.

Au Qtr. Prereq: Permission of instructor.

**642 Scene Painting and Watercolor U G 3**

Techniques used in scene painting and watercolor; mixing and matching colors, rendering texture and form, enlarging painter's elevations; types of paints used in scene painting.

Sp Qtr. Prereq: 641. Repeatable to a maximum of 6 cr hrs.

**643 Stage Design I U G 3**

Investigation of 20th-century design and rendering techniques and their application to the stage; experience in researching and designing projects.

Au Qtr. 2 cl, 3 lab hrs, and indiv conferences. Prereq: 341 or equiv with written permission of instructor.

**644 Intermediate Stage Design II U G 3**

Presentation of the design concept in three-dimensional media; emphasis on designing for nonproscenium production.

Wi Qtr. 1 2-hr cl, 3 lab hrs. Prereq: 643 or equiv with written permission of instructor.

**645 Modern Stage Design Styles U G 3**

Study of the application of major stylistic trends in scenic design to modern theatrical productions through lecture-discussion and specific design projects.

Sp Qtr. Arr. Prereq: 644 or equiv with written permission of instructor.

**651 Intermediate Stage Costume Construction U G 3**

Methods of pattern development and construction techniques for creating historical stage costumes.

Sp Qtr. 2 cl hrs, 2 lab hrs. Prereq: 222 or written permission of instructor.

**652 Advanced Costume Construction for the Theatre U G 3**

The study of the materials, techniques, and procedures used in the design and construction of period stage costume, properties, and accessories.

Sp Qtr. 2 cl, 2 hrs lab. Prereq: 651.

**656 Costume Design for the Stage U G 3**

The study of the theories, principles, and process by which costumes are designed for a theatrical production.

Au Qtr. 2 cl, 5 lab hrs. Prereq: 100 or equiv with written permission of instructor.

**657 History of Costuming for the Stage U G 3**

Study of historical periods of clothing most often used in play production with emphasis on the relationship of period clothing to social deportment and movement.

Wi Qtr. 2 cl hrs, 2 lab hrs.

**658 Intermediate Costume Design U G 3**

Methods of stylization of costume design for drama, ballet, opera, musical comedy, and children's theatre.

Sp Qtr. 2 cl, 5 lab hrs. Prereq: 656 and 657.

**660 Playwrighting U G 5**

Laboratory course in playwrighting; student plays developed from original idea through scenario into final production script with limited production of selected works.

Prereq: Basic knowledge of dramatic literature and permission of instructor. Repeatable to a maximum of 10 cr hrs.

**671 History of the Theatre I U G 3**

Greek, Roman, medieval, Renaissance, and early Baroque theatre.

Au Qtr. 3 cl.

**672 History of the Theatre II U G 3**

Late Baroque theatre on the continent and England; romanticism; early forms of realistic theatre in Europe.

Wi Qtr. 3 cl.

**673 History of the Theatre III U G 3**

Western European theatre from the appearance of naturalism through the theatre of the absurd.

Sp Qtr. 3 cl.

**674 Contemporary Theatre History U G 3**

Contemporary continental, English, and American theatre, post World War II to the present.

Sp Qtr.

**680 Cinema/Video Scene Workshop I U G 3**

Exploration of directing talent and acting for single-camera style video/film production.

Wi Qtr. 3 2-hr cl. Prereq: Permission of instructor. Open only to MFA acting and cinema majors. Not open to students with credit for 986.

**681 Cinema/Video Scene Workshop II U G 3**

Addresses problems of directing talent and acting for single-camera style video/film production.

Sp Qtr. 3 2-hr cl. Prereq: 680 and permission of instructor. Open only to MFA acting and cinema/video majors. Not open to students with credit for 987.

**685 Mime U G 2**

Study of techniques, styles, and presentation of the art of mime.

Au, Wi, Sp Qtrs. 2 2-hr cl. Repeatable to a maximum of 4 cr hrs.

**689 Field Work in Theatre, Cinema, or Video U G 3-15**

Planned production or management experience in an off-campus professional, educational, community theatre, film or video facility, or other agency under supervision.

Su, Au, Wi, Sp Qtrs. Prereq: Advanced undergrad or grad standing; written permission of adviser. Repeatable to a maximum of 15 cr hrs.

**692 Workshops U G 1-15**

Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.

Su Qtr. Prereq: Upper-division or grad standing, prior study and training in the theatre arts, and written permission of workshop director. Repeatable to a maximum of 18 cr hrs.

**693 Individual Studies U G 1-5**

Conference, library, and laboratory work.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****725 Advanced Stage Lighting Design U G 3**

Study and analysis of lighting design styles in relation to different forms of theatre arts; emphasis on practical problems.

Wi Qtr. 2 2-hr cl, 3 lab hrs. Prereq: 625.

**727 Advanced Lighting Technology U G 3**

Study of current and future lighting technology in the area of control systems and stage lighting equipment as it applies to advanced lighting design.

Sp Qtr. 2 2-hr cl. Prereq: 625 or equiv.

**762 Theatre/Cinema Styles U G 3**

Study and analysis of significant styles of production in the live theatre cinema, and video.

Au Qtr. 3 cl. Prereq: Permission of instructor required of undergraduates.

**771 Advanced Stage Movement Studio I U G 2**

Advanced mask work: focus on neutrality.

Au Qtr. 4 cl. Prereq: Grad standing and audition; or permission of instructor and audition.

**772 Advanced Stage Movement Studio II U G 2**

Physical comedy: focus on various historical and theatrical styles.

Wi Qtr. 4 cl. Prereq: 771.

**773 Advanced Stage Movement Studio III U G 2**

Stage combat: application to dramatic literature.

Sp Qtr. 4 cl. Prereq: 772.

**774 Cinematic Representation G 3**

Exploration of issues of representation and meaning of cinematic expression.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in theatre or permission of instructor.

**775 Concepts and History of the Repertory/Ensemble G 3**

Theory and practice of the repertory/ensemble model in the theatre, cinema, and video of the twentieth century.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing in theatre or permission of instructor.

**776 Issues in Contemporary Cinema/Video Production U G 3**

Historical examinations of experimental and innovative cinema/video works with participation in Wexner Center film/video program.

Sp Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**777 Studies in the Documentary U G 3**

Conceptual, aesthetic, critical, social, ethical, practical issues in the practice of documentary and docudrama production of cinema and video works.

Au Qtr. 2 2-hr cl, 1 lab. Prereq: Permission of instructor.

**778 A History of the Moving Image U G 3**

Overview of creative and technological developments of the kinetic image from the magic lantern to television; historical relationships of stage and screen.

Wi Qtr. 2 2-hr cl. Prereq: Grad standing in theatre or permission of instructor.

**779 World Film Cultures U G 3**

Survey of world film cultures with focus on a specific national and regional cinema.

Sp Qtr. 2 2-hr cl. Prereq: 778 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

**780 Advanced Acting Studio I U G 3**

Method characterization: the actor is trained towards neutrality and introduced to process characterization; scene study from poetic realism.

Au Qtr. 3 2-hr cl. Prereq: Grad standing and audition; or permission of instructor and audition. Not open to students with credit for 790.

**781 Advanced Acting Studio II U G 3**

Shakespeare and epic styles: focus on extending the actor's range and use of strategy and on the use of language for characterization.

Wi Qtr. 3 2-hr cl. Prereq: 780. Not open to students with credit for 791.

**782 Advanced Acting Studio III U G 3**

Comedy and comic technique: training focuses on improvisation as a basis of character analysis; scene study from realism, post-modernism, and farce.

Sp Qtr. 3 2-hr cl. Prereq: 781. Not open to students with credit for 792.

**H783 Honors Research U 3-5**

An individual program of study, with conferences, reports, and honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a grade of A in at least half of the theatre courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee or the Arts Honors Committee whichever is relevant to the student's program. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**786 Advanced Speech and Voice Studio I U G 2**

Installation of a unified voice/speech system: individual problems with emphasis on Standard American Preferred Speech.

Au Qtr. 4 cl. Prereq: Audition and grad standing.

**787 Advanced Speech and Voice Studio II U G 2**

Phonetics and psychology of sound: continuation of 786.

Wi Qtr. 4 cl. Prereq: 786.

**788 Advanced Speech and Voice Studio III U G 2**

Character work: applying phonetics and psychology of sound.

Sp Qtr. 4 cl. Prereq: 787.

**800 Advanced Studies in Theatre G 3 or 5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

**800.01 Stage Direction/Management****800.08 Acting****800.09 Theatre Management****801 Research Methods G 3**

Introduction to graduate study: methods and tools of research in all areas of theatre and cinema/video.

Au Qtr. 2 2-hr cl, lab arr.

**802 Seminars in Theatre G 2-5**

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

**802.03 Dramatic Literature****802.08 Acting****805 Graduate Theatre Practicum G 1-5**

Individual theatrical performance and production activities at an advanced level under faculty supervision.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of adviser. Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions.

**805.01 Stage Direction/Management****805.02 Technical Production****805.03 Dramaturgy****805.04 Stage Design****805.05 Costuming/Makeup****805.08 Acting****810 Directing Period Drama G 3**

Advanced problems in directing, utilizing scenes from period plays.

Wi Qtr. Prereq: 610, 671, 672, 673, and 762; or equiv and permission of instructor.

**812 Directing Workshop G 1**

Advanced processes in directing with an emphasis on the presentation of actual scenes/one-acts.

Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: 610 and permission of instructor. Repeatable to a maximum of 9 cr hrs.

**813 Cinema/Video Sketchbook I G 3**

Exploration of sketchbook approach to research and development of creative cinema/video projects.

Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

**814 Cinema/Video Sketchbook II G 3**

Continued examination of creative approach to cinema/video idea development with introduction of actors to the process.

Wi Qtr. 2 2-hr cl. Prereq: 813 or permission of instructor.

**815 Cinema/Video Sketchbook III G 3**

Application of creative methods used in sketchbook sequence to self-directed research and development of short sketchbook projects.

Sp Qtr. 2 2-hr cl. Prereq: 814 or permission of instructor.

**816 Cinema/Video Mise en Scene I G 3**

Directed research and practice in issues of mise en scene for creative cinema/video production.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor. Open only to MFA theatre, cinema/video students.

**817 Cinema/Video Mise en Scene II G 3**

Exploration of devices of mise en scene to facilitate collaboration and repertory methods of cinema/video production.

Sp Qtr. 2 2-hr cl. Prereq: 816. Open only to MFA theatre, cinema/video students.

**820 Pre-Production I: Thesis Idea G 3**

Cinema/video thesis concept development for narrative/non-narrative and documentary production.

Au Qtr. 2 2-hr cl. Prereq: 816.

**821 Pre-Production II: Scenario Development G 3**

Examination of concepts in screenplay development.

Wi Qtr. 2 3-hr cl. Prereq: 820.

**822 Pre-Production III: Advanced Screenwriting G 3**

Alternative solutions to thesis script development.

Sp Qtr. 2 2-hr cl. Prereq: 821 and permission of instructor.

**823 Montage I: Editing Concepts and Practice G 3**

Project-oriented course in the conceptual foundations of the art of cinematic and video editing.

Sp Qtr. 2 2-hr cl. Prereq: 817 or permission of instructor.

**824 Montage II: Sound Concepts and the Image G 3**

Examination of innovative concepts and practice in sound/image design.

Au Qtr. 2 2-hr cl. Prereq: 823 or permission of instructor.

**825 Advanced Stage Lighting Design II G 3**

Advanced study of lighting design and its creative application to modern theatre practice.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 725 or permission of instructor.

**826 Montage III: Editorial Styles in Cinema/Video G 3**

Project-oriented course in editing styles and editor/director relationships.

Wi Qtr. 2 2-hr cl. Prereq: 824 or permission of instructor.

**833 Seminal Modern Drama G 3**

Consideration of modern dramatists who have most influenced the content and the technique of contemporary drama.

Au Qtr.

**834 Contemporary Drama G 3**

Consideration of the most significant dramatists since 1975.

Wi Qtr. 3 cl.

**845 Advanced Scene Design G 3**

Study of historic and modern scene design and application to modern theatrical stage practices; experience in executing creative and interpretive project designs.

Su, Au, Wi, Sp Qtrs. Prereq: 645 or equiv and permission of instructor. Repeatable to a maximum of 9 cr hrs.

**855 Advanced Stage Costume Design G 3**

Theory, methods, and materials of costume design with emphasis on design problems for the stage.

Su, Au, Wi, Sp Qtrs. Prereq: 658 or equiv and written permission of instructor. Repeatable to a maximum of 9 cr hrs.

**860 Theatrical Criticism I G 3**

Detailed analysis of the classical sources of critical theory of the theatre.

Wi Qtr. 3 cl. Prereq: 762.

**861 Theatrical Criticism II G 3**

Concentrated analysis of critical theories presented in chapters 12 through 20 of Aristotle's *Poetics* and the examination of neoclassical and romantic theories and critics.

Sp Qtr. 3 cl. Prereq: 860 or written permission of instructor.

**863 Theatrical Criticism III G 3**

Detailed analysis of critical theories of the 20th century, especially since 1945.

3 cl. Prereq: 861 taken after Au Qtr 1985 or permission of instructor.

**870 Greek, Roman, and Medieval Theatre G 3**

Advanced study and directed research in Greek, Roman, and Medieval theatre and drama.

Wi Qtr. Prereq: 671 or equiv.

**872 European Renaissance Theatre and Baroque Theatre G 3**

Advanced study and directed research in European Renaissance theatre and Baroque theatre and drama.

Au Qtr. Prereq: 671 and 672 or equivalents.

**873\* 18th- and 19th-Century Theatre G 3**

Advanced study and directed research in European and American theatre and drama through the beginning of the twentieth century.

Sp Qtr. Prereq: 671, 672 and 673, or equivalents.

**879 Introduction to the Principles and Process of Acting G 3**

Major theories of acting and methods of actor training in the 20th century for the non-acting major.

Au Qtr. 2 2-hr cl. Prereq: Grad standing in theatre.

**880 Advanced Acting Studio IV G 3**

Presentational performance: technique of outer direction and of creating character duality through mask.

Au Qtr. 3 2-hr cl. Prereq: 782.

**881 Advanced Acting Studio V G 3**

Period styles: exploration of acting conventions of classical periods; characterizations through manners, deportment, costumes, and properties; use of heightened language.

Wi Qtr. 3 2-hr cl. Prereq: 880.

**882 Advanced Acting Studio VI G 3**

Applied styles: exploration of acting techniques and conventions of comedy, tragedy, farce, melodrama, and tragicomedy.

Sp Qtr. 3 2-hr cl. Prereq: 881.

**883 Advanced Speech and Voice Studio IV G 2**

Voice and speech maintenance: development of skills in vocal performance of verse drama.

Au Qtr. 4 cl. Prereq: 785.

**884 Advanced Speech and Voice Studio V G 2**

Vocal technique for Shakespearean comedy: development of the techniques for the vocal performance of high and low comic plays of Shakespeare.

Wi Qtr. 4 cl. Prereq: 883.

**885 Advanced Speech and Voice Studio VI G 2**

Vocal techniques for Restoration and Greek drama: development of the techniques for the vocal performance of characters from the plays of the Restoration and Classical Greek periods.

Sp Qtr. 4 cl. Prereq: 884.

**886 Advanced Stage Movement Studio IV G 2**

Synthesizing the mask: Physical alignment and mask work with the synthesis of mask and other scenic design elements.

Au Qtr. 4 cl. Prereq: 773.

**887 Advanced Stage Movement Studio V G 2**

Caricatured self-mask: study of the personal clown with the caricatured self-mask.

Wi Qtr. 4 cl. Prereq: 886.

**888 Advanced Stage Movement Studio VI G 2**

Graphing movement principles: review of specific movement principles, graphing them for the acting process.

Sp Qtr. 4 cl. Prereq: 887.

**893 Individual Studies G 3-5**

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**980 Advanced Acting Studio VII G 3**

Rehearsal techniques: special emphasis on the style, research, and characterization proper to the plays in the concurrent repertory season.

Au Qtr. 3 2-hr cl. Prereq: 882.

**981 Advanced Acting Studio VIII G 3**

Rehearsal techniques: special emphasis on concurrent plays in repertory company season.

Wi Qtr. 3 2-hr cl. Prereq: 980.

**982 Advanced Acting Studio IX G 3**

Rehearsal techniques: special emphasis on concurrent plays in repertory company season.

Sp Qtr. 3 2-hr cl. Prereq: 981.

**983 Advanced Speech and Voice Studio VII G 2**

Applied phonetics: advanced study of phonetic transcription and structural awareness.

Au Qtr. 4 cl. Prereq: 885.

**984 Advanced Speech and Voice Studio VIII G 2**

Stage dialects: process and practical application of phonetic and structural variations in performing dialects.

Wi Qtr. 4 cl. Prereq: 983.

**985 Advanced Speech and Voice Studio IX G 2**

Character voices: process and practical application of phonetic and structural variations in performing character voices.

Sp Qtr. 4 cl. Prereq: 984.

**995 Proseminar G 1**

Reading and directed research in theatre history, criticism and literature, and an examination of the theoretical and social dimensions of the theatrical art.

Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

**998 Research in Theatre: Thesis G 1-6**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**999 Research in Theatre: Dissertation G Arr**

Research for dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Turkish

256 Cunz Hall, 1841 Millikin Road, 292-9255

**101 Elementary Turkish I U 5**

Introduction to Turkish; development of listening, reading, speaking, and writing skills.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

**102 Elementary Turkish II U 5**

Further development of listening, reading, speaking, and writing skills.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

**103 Intermediate Turkish I U 5**

Development of listening, reading, speaking, and writing skills; reading of simplified literary texts about Turkish culture.

Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

**104 Intermediate Turkish II U 5**

Reading of Turkish short stories and poems with attention to literary and cultural appreciation; development of basic language skills.

Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

**241 Turkish Culture U 5**

An introduction to Turkish culture through reading of literature and criticism, and listening and viewing of films, slides, and performances arranged for the class.

Wi Qtr. 5 cl. BER/GEC/LAR course.

**Masterpieces of Near Eastern Literatures in Translation**

See NJH 272.

**293 Individual Studies U 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**294 Group Studies U 1-5**

Special topics announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**371 Turkish Sufism U 5**

An introduction to the literature, forms of thought, and institutions of Turkish Sufism.

Sp Qtr. 2 2-hr cl. Prereq: English 110 or 111 or equiv. No knowledge of Turkish required. BER/GEC/LAR course.

**372 Turkish Literature in Translation U 5**

A study of Turkish literature and the history of its discourses, genres, and styles.

Wi, Sp Qtrs. 5 cl. BER/GEC/LAR course.

**401 Advanced Turkish I U 5**

Extensive reading from literary texts, with practice in conversation and composition.

Wi Qtr. 5 cl. Prereq: 104 or equiv. Not open to students with credit for 294 Wi Qtr 83 or Wi Qtr 84.

**402 Advanced Turkish II U 5**

The study of nineteenth- and twentieth-century literary texts, with advanced composition and translation.

Sp Qtr. 5 cl. Prereq: 401 or equiv. Not open to students with credit for 294 Sp Qtr 83 or Sp Qtr 84.

**610 Ottoman Orthography, Conventions, and Style U G 5**

Usage and syntax in the old Turkish script, 14th through 20th centuries.

Au Qtr. 2 2-hr cl. Prereq: One course in Turkish at the 600-level or above, or permission of instructor.

**627 Classical Turkish Poetry U G 5**

Reading and analysis of Turkish poetry of the 13th through 18th centuries; Turkish metrics and literary theory.

Wi, Sp Qtrs. 2 2-hr cl. Prereq: 402 or permission of instructor.

**651 Modern Turkish Poetry and Prose U G 5**

Selected topics in poetry and prose of the 20th century; conducted in Turkish.

Au, Sp Qtrs. 5 cl. Prereq: 402 or permission of instructor.

**693 Individual Studies U G 1-5**

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**694 Group Studies U G 1-5**

Special topics announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**721 Studies in Turkish and Ottoman Literature and Criticism U G 5**

Movements, authors, and critical schools of Turkish and Ottoman poetry and prose.

Wi Qtr. 2 2-hr cl. Prereq: 10 cr hrs of Turkish literature at the 600 level or equiv, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

**H783 Honors Research U 3-5**

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**811 Seminar in Turkish and Ottoman Studies G 5**

Intensive study of a specific topic of literary and intellectual culture; preparation of final paper required.

Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**998 Research in Turkish G 1-10**

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

## Ukrainian

232 Cunz Hall, 1841 Millikin Road, 292-6733

### 101+\* Elementary Ukrainian I

Development of oral and written language skills.

Not open to native speakers of this language through regular course enrollment or EM credit. FL Admis Cond courses.

#### 101.51 Individualized Track U 1-5

Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

### 102+\* Elementary Ukrainian II

Development of oral and written language skills.

Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. FL Admis Cond courses.

#### 102.51 Individualized Track U 1-5

Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.

### 103+ Intermediate Ukrainian I

#### 103.51 Individualized Track U 1-5

Development of all four skills: listening comprehension, speaking, reading, and writing.

Prereq: 102.01 or 5 cr hrs of 102.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor.

### 104+ Intermediate Ukrainian II

#### 104.51 Individualized Track U 1-5

Continuation of 103.51; development of the four skills.

Prereq: 5 cr hrs of 103.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor.

### 405+ Advanced Ukrainian I

#### 405.51 Individualized Track U 1-5

Continued development of the four skills based primarily on reading selections from the contemporary Ukrainian press.

Prereq: 5 cr hrs of 104.51 or 111 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 104.51 and 405.51 concurrently with permission of instructor.

### 407+ Advanced Ukrainian II

#### 407.51 Individualized Track U 1-5

Continuation of 405.51.

Prereq: 5 cr hrs of 405.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

## University College

110 Enarson Hall, 154 West 12th Avenue, 292-6344

### 100 University Survey U 1

Introduction to the University community; strategies for successful transition to and participation in that community; institutional context of academic programs; education and learning as life-long processes; University resources and procedures.

Su, Au, Wi, Sp Qtrs. 2 1-hr cl. H100 (honors) decimal subdivisions may be available to students enrolled in an honors program or by permission of college. Students schedule a section of University Survey corresponding to their curricular academic program. Not open to students with credit for Agr 100, Arts&Sci 100, Bus Adm 100, or Engineer 100.

#### 100.01 Business Survey

#### 100.03 Agriculture Survey

#### 100.05 Allied Medical Professions Survey

#### 100.07 Architecture Survey

#### 100.09 Art Survey

#### 100.11 Arts and Sciences Survey

#### 100.13 Dentistry Survey

#### 100.15 Dental Hygiene Survey

#### 100.17 Education Survey

#### 100.19 Engineering Survey

#### 100.21 General Baccalaureate Survey

#### 100.23 Human Ecology Survey

#### 100.25 Medicine Survey

#### 100.27 Music Survey

#### 100.28 Natural Resources Survey

#### 100.29 Nursing Survey

#### 100.31 Optometry Survey

#### 100.33 Pharmacy Survey

#### 100.35 Social Work Survey

#### 100.37 Veterinary Medicine Survey

## Veterinary Anatomy and Cellular Biology

A-100 Sisson Hall, 1900 Coffey Road, 292-2091

### 693 Individual Studies P G 2-5

Training in laboratory investigation of special problems. Graduate faculty. Su, Au, Wi, Sp Qtrs. 1 cl, 6-15 lab hrs. Prereq: VM Coll 530 and 531. Repeatable to a maximum of 18 cr hrs.

### 696 Advanced Studies in Veterinary Anatomy and Cellular Biology P G 1-6

Advanced studies in various topics in the fields of Veterinary Anatomy and Cellular Biology, such as topographic anatomy, microscopic anatomy, etc. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet Med or Grad standing. Repeatable to a maximum of 20 cr hrs. This course is graded A-E.

### 700 Applied Functional Neuroanatomy I P G 3

Study of structure and function of autonomic, peripheral, and central nervous systems of infraprimates, with references to primates, as related to clinica neurology, neurophatology, neuro surgery, or neurobiological research. Anatomy faculty.

Wi Qtr. 3 cl. Prereq: VM Coll 603, CBN&Anat 704 or equiv, and permission of dept.

### 701\* Applied Functional Neuroanatomy II P G 3

An application of the structure and function of the central nervous system of the infraprimates, with reference to primates. Anatomy faculty.

Sp Qtr. 3 cl. Prereq: VM Coll 603, Anatomy 704 or equiv, and permission of dept.

### 710\* Anatomy of Avian and Sub-Primate Laboratory Animals P G 3

A comparative anatomical study of the various systems of the avian species and common sub-human primates used in laboratory investigation.

Sp Qtr. 2 cl, 1 3-hr lab. Prereq: VM Coll 520 and 521 or equiv course work in anatomy.

### 796 Advanced Studies in Veterinary Anatomy and Cellular Biology P G 2-6

Provides flexibility in the veterinary professional program by offering selected topics in veterinary anatomy. Anatomy faculty.

Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs for prof cr and 2-8 cr hrs for grad cr.

#### 796.01 Equine Surgical Anatomy P G 3

Emphasis on blood and nerve supply to common surgical sites; special emphasis involving methods of anesthetizing selected surgical areas and areas useful in diagnostic procedures for lameness.

Wi Qtr. 1 cl, 1 3-hr lab. Prereq: VM Coll 521 or equiv. and permission of instructor.

#### 796.02\* Ophthalmic Anatomy P G 2

The comparative anatomy, histology, neuroanatomy, and embryology of the orbit and its contents in mammals, birds, and reptiles.

Sp Qtr. Prereq: VM Coll 612 or equiv and permission of instructor.

#### 796.03 Surgical Anatomy of the Dog and Cat P G 4

Surgical and clinical anatomy of the dog and cat as studied by dissection, lecture, prosection, and palpation.

Sp Qtr. 2 cl, 2 2-hr labs.

### 799 Seminar in Veterinary Anatomy P G 1 or 2

Presentation of new scientific knowledge in the morphological sciences by faculty and graduate students. Anatomy faculty.

Su, Au, Wi, Sp Qtrs. Prereq: Grad or professional standing in vet anat. Repeatable to a maximum of 16 cr hrs.

**801 Anatomical Techniques G 2-5**

Theory and practice of macroscopic, microscopic, and scanning electron microscopic methods, including specimen preparation for microcirculation studies, fixing, imbedding, sectioning, mounting, and staining of animal tissue. Special emphasis is placed upon techniques for the preparation of microcorrosion casts for SEM study. Graduate faculty.

Su, Au, Wi, Sp Qtrs. 1 cl, 6-15 lab hrs. Prereq: VM Coll 521, 531 or equiv and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**802 Advanced Veterinary Anatomy G 3-5**

Advanced topographical anatomy of domestic animals studied by lecture, prosection, and dissection. Graduate faculty.

1 cl, 1 hr prosection, 2-6 lab hrs. Prereq: Vet med 3rd yr standing, veterinary gross anatomy, and permission of instructor.

**803 Muscle Biology and Ultrastructure G 3-5**

Structural basis of muscle contraction explored through application of methodology for myofibrillar protein isolation and characterization through electron microscopy.

Wi Qtr. 1 2-hr cl, 1 3-hr lab. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

**999 Research in Veterinary Anatomy G Arr 1-18**

Research for dissertation or thesis purposes only. Graduate faculty.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. This course is graded S/U.

## Veterinary Clinical Sciences

1010 Veterinary Hospital, 1935 Coffey Road, 292-7105

**622 Advanced Equine Medical and Surgical Procedures P G 1**

Au, Wi Qtrs. 3-6 lab hrs. Prereq: Vet med 3rd yr standing and VM Coll 617. For students with an interest in equine medicine and surgery.

**622.01 Advanced Equine Medical and Surgical Procedures**

Tracheal wash, thoracentesis, CFS samples, bone marrow biopsies, epidural anesthesia, endoscopy, nerve blocks, castrations, arthrocentesis, tracheotomy, and cast applications.

Open to grad students with permission.

**622.02 Alternative Advanced Equine Medical and Surgical Procedures.**

Alternative to 622.01 for those students who object to the use of live animals in their education; this course will entail video instruction, assigned reading, and additional rotations in equine medicine and surgery, and field services which must be taken in the 4th yr to cover the subjects in 622.01.

**655 Photography in the Practice of Veterinary Medicine P 3**

Common medical photography principles applied in such areas as patient documentation, surgery, gross specimen photography, ophthalmology, and radiography reduction.

Au, Sp Qtrs. 3 cl.

**696 Advanced Studies in Veterinary Clinical Sciences P G 1-4**

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 2nd, 3rd or 4th yr standing. Repeatable to a maximum of 20 cr hrs.

**710 Applied Veterinary Medicine Options**

A series of clinical studies offered as electives for 4th year Vet Med students to arrange into an elective program in conjunction with a faculty adviser.

Su, Au, Wi, Sp Qtrs. Clinics, seminars, ward rounds, and 24-hr patient care responsibilities. Prereq: Vet med 4th yr standing. Repeatable to a maximum of 6 cr hrs unless noted otherwise.

**710.01 Receiving/Out-Patient Clinic P 2, 3**

Clinical instruction designed to improve the student's proficiency in client relations, diagnosis, treatment, and prevention of diseases in out-patients.

**710.02 Small Animal Medicine P 1-5**

Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of small animals.

Repeatable to a maximum of 10 credit hrs.

**710.03 Small Animal Surgery P 2 or 3**

The application of principles of surgery to treatment of diseases of companion animals.

**710.04 Food Animal Medicine and Surgery P 2 or 3**

Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of food animals.

**710.05 Equine Medicine and Surgery P 2 or 3**

Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of the horse.

**710.06 Field Service P 2 or 3**

The application of the principles of management, diagnosis, treatment, and prevention of disease in farm and exotic animals in the environment in which they are produced.

Field trips to facilities for patient care, case discussions, seminars, and 24-hr patient care responsibilities.

**710.07 Veterinary Clinical Radiology P 2, 3**

Diagnostic and therapeutic techniques that will broaden the student's knowledge in clinical diagnosis and treatment.

**710.08 Clinical Microbiology P 2, 3**

Assignment of patients for in-depth study of diagnosis and course of disease with emphasis on selection and interpretation of laboratory parameters; emphasis on microbiologic and immunologic methods for diagnosis and evaluation of infectious disease.

**710.09 Clinical Anesthesiology P 2, 3**

The application of principles of anesthesiology.

**710.12 Veterinary Clinical Ophthalmology P 2, 3**

Application of principles of diagnosis and treatment of diseases of the eye to patients of all species.

**710.13 Applied Theriogenology P 2 or 3**

Application of principles of diagnosis, treatment, and prevention of diseases of the reproductive system of all species.

Sp Qtr.

**720 Veterinary Clinical Nutrition**

This course is graded S/U.

**720.01 Introduction to Veterinary Clinical Nutrition P 2**

Basic animal nutrition and feeding and nutrition-related problems.

Wi Qtr. 2 cl. Prereq: Vet med 2nd yr standing or permission of instructor.

**720.02 Advanced Veterinary Clinical Nutrition P 1-2**

Presentation of nutrition-related problems in large and small animal clinical practice.

Sp Qtr. 2 cl.

**724 Topics in Feline Medicine and Surgery P 1**

To provide third and fourth year veterinary students with information on selected medical and surgical topics unique to the cat.

Sp Qtr. 1-hr cl. Prereq: Vet med 3rd or 4th yr standing. Professional students only. Not repeatable. This course is graded S/U.

**725 Canine and Feline Dentistry P G 1**

Lectures, demonstrations, and laboratories covering prophylactic care, and extraction of teeth, endodontic and prosthodontic therapy.

Sp Qtr. Prereq: Vet med 3rd or 4th yr standing or permission of instructor.

**727 Diseases of Pet Birds and Aquarium Fish P G 2**

Aspects of pet bird practice including restraint, nutrition, disease problems, therapy, radiology, anesthesia, and surgery of budgerigars, and other species of pet caged birds; includes laboratory utilizing live birds enabling students to practice techniques; management, nutrition, and common disease problems of aquarium fish will be discussed.

Wi Qtr. 2 cl. Prereq: Vet med 2nd, 3rd, or 4th yr standing or written permission of instructor.

**730\* Topics in Equine Sports Medicine P G 3**

Current concepts of diagnosis and treatment of diseases that limit athletic performance of the horse.

Wi Qtr. 4 cl. Prereq: Vet med 4th yr standing.

**731 Topics in Equine Medicine P G 1**

A seminar course covering recent "classic" articles from the literature.

Sp Qtr. 1 cl. Prereq: Vet med 3rd or 4th yr standing.

**736 Diseases of Sheep P G 3**

Lecture, discussion, and demonstration of diagnosis, treatment, and prevention of sheep diseases including field surgery and management; goat diseases may also be discussed; time permitting one or more labs will be held.

Wi Qtr. Prereq: 2nd, 3rd, or 4th yr standing.

**738 Pleasure Horse Medicine P 1**

Review of prevention, diagnosis, and treatment of diseases which are common problems of pleasure horses.

Au Qtr. Prereq: Vet med 2nd, 3rd, or 4th yr standing.

**740\* Analysis of Pharmacological Systems I P G 3**

Analysis of several pharmacological systems using a combination of classical mathematical analysis, model building, and newer analog and digital techniques.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

**741 Zoo Animal Medicine P 1**

Discussion and illustrations covering chemical restraint, maintenance of animal health, disease prevention and treatment, past history discussions, and other duties confronting zoo veterinarians.

Wi Qtr. 1 cl. Prereq: Vet med 2nd, 3rd, or 4th yr standing.

**742\* Analysis of Pharmacological Systems II P G 3**

Continuation of 740; comparison of existing methods for estimating kinetic parameters.

Su Qtr. 3 cl. Prereq: Permission of instructor.

#### 743 Pocket Pet Medicine P 1

Basic medicine, surgery, and husbandry for pocket pets, including rabbits, ferrets, guinea pigs, mice, rats, gerbils, chinchillas, and hamsters.  
 Au Qtr. 1 cl. Prereq: Vet Med 2nd, 3rd, or 4th yr standing. This course is graded S/U.

#### 744 Reptile Medicine P 1 or 2

Covers material needed to diagnose and treat the most common diseases seen in pet reptiles.

Wi Qtr. 1 cl (for 1 cr); labs arr (for 2 cr). Prereq: Vet med 2nd, 3rd, or 4th yr standing.

#### 745 Applications of Microcomputers to Veterinary Medicine P 2

Hardware, software, and applications to veterinary medicine.

Wi Qtr 2 cl. Prereq: Vet med 4th yr standing.

#### 760 Specialized Study in Veterinary Medicine P 1-16

Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing and permission of instructor. To be taken during elective qtr. Cross listed in all veterinary medicine depts. Repeatable to a maximum of 16 cr hrs. Students must serve at least 4 wks in one experience to receive minimum elective cr. This course is graded S/U.

#### 764 Design and Analysis of Comparative Biomedical Research I P G 3

Theory and application of basic statistical concepts as they affect design, analysis, and interpretation of biomedical research.

Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd or 4th yr standing; or permission of instructor. Not open to students with credit for 640 or Prev Med 764 or Vet Prev 764. Cross-listed in Preventive Medicine and Veterinary Preventive Medicine.

#### 770 Orthopedic Conference P G 2

Practical application of advanced surgical techniques for treatment of diseases of the skeletal system requiring surgery.

Sp Qtr. 2 conferences per week. Prereq: Vet med 4th yr standing or permission of instructor.

#### 775 Design and Analysis of Comparative Biomedical Research II P G 3

Continuation of 764.

Wi Qtr. 3 cl. Prereq: Vet med 2nd, 3rd, or 4th yr standing; or permission of instructor. Not open to students with credit for 641 or Vet Prev 775.

#### 780 Diagnostic Contrast Radiology P G 1-8

Routine contrast studies of the digestive, urinary, and nervous systems, with emphasis on techniques and contrast materials; small groups of students will perform each of the procedures.

Au, Wi, Sp Qtrs. Prereq: Vet med 3rd or 4th year or grad standing.

#### 782\* Pharmacology of Cardiac Drugs P G 3

Clinical evaluation, pharmacokinetics, and pharmacotherapy of cardiac dysrhythmias.

Wi Qtr. 2 cl. Prereq: 3rd or 4th yr or grad standing. Not open to students with credit for Vet Phys 782.

#### 790 Advanced Theriogenology Seminar P G 1

Review of current theriogenology literature placing primary emphasis on experimental design, procedures, and scientific conclusions of reported work; each student will orally describe and prepare a written research protocol.

Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to maximum of 15 cr hrs.

#### 791 Reproductive Techniques

Au, Wi Qtrs. Prereq: Vet med 3rd yr standing.

##### 791.01 Equine Reproductive Studies P G 3

Presents equine techniques and explanations for when to perform the procedures and how to interpret results.

6 lab hrs.

##### 791.02 Bovine Reproductive Techniques P G 2

Evaluation of the bovine reproductive system including pregnancy diagnosis, breeding soundness evaluation, and artificial insemination techniques.

1 cl, 1-2 hr cl.

#### 792 Reproduction Laboratory, Bovine P G 2

A laboratory for the application of diagnostic and therapeutic techniques for diseases of the reproductive system of domestic animals.

Sp Qtr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 18 cr hrs.

#### 793 Individual Studies P G 1-8

A supervised critical investigation of some aspects of animal disease about which there is a mutual curiosity on the part of both the student and faculty.

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 3rd or 4th yr standing, adequate clinical training and written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

#### 796 Advanced Studies in Veterinary Clinical Sciences

##### 796.01 Advanced Topics in Equine Surgery G 3

Practical application of advanced surgical techniques for treatment of diseases of horses.

Wi Qtr. 3 cl. Prereq: Grad students with DVM degree.

##### 796.02\* Advanced Equine Lameness P G 1-8

Study of the methods used for diagnosis and treatment of diseases causing lameness in horses; includes radiographic and surgical techniques.

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 4th yr standing or written permission of instructor. Repeatable to a maximum of 30 cr hrs.

##### 796.03 Advanced Gastroenterology P G 1-8

Study of diagnosis, treatment, and prevention of diseases of the gastrointestinal system.

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 4th yr standing or written permission of instructor. Repeatable to a maximum of 30 cr hrs.

#### 850 Seminar in Veterinary Clinical Sciences G 1

Su, Au, Wi, Sp Qtrs. 1 hr per wk in seminar. Prereq: The degree Doctor of Veterinary Medicine. Repeatable to a maximum of 10 cr hrs.

#### 999 Research in Veterinary Clinical Sciences G Arr 1-18

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Veterinary Medicine, College of

101A Sisson Hall, 1900 Coffey Road, 292-1171

#### 510 Principles of Epidemiology P 4

Descriptive and analytical epidemiology, including design, analysis, and interpretation of results; veterinary economics and information handling techniques; host, agent, and environmental factors in disease causation.

Au Qtr. 3 cl and 2 lab hrs. Prereq: Vet med 1st yr standing.

#### 520 Topographic Anatomy (Canine) P 5

Body and its components as forms, relationships, and mechanical functioning.

Au Qtr. 2 cl, 3 2-hr labs. Prereq: Vet med 1st yr standing.

#### 521 Topographic Anatomy (Equine) P 4

Continuation of 520.

Wi Qtr. Prereq: Vet med 1st yr standing.

#### 522 Topographic Anatomy (Food Animals) P 4

Continuation of 521.

Sp Qtr. 2 cl, 2 lab hrs. Prereq: Vet med 1st yr standing.

#### 525 Principles of Radiology P 1

Study of the basic principles of radiology, including positioning, exposure and processing, radiation biology, and radiation safety.

Wi Qtr. Prereq: 1st yr standing in vet med.

#### 530 Microscopic and Developmental Anatomy I P 5

Study of microscopic and ultrastructural features of cells and tissues, as well as basic fetal development.

Au Qtr. Prereq: Vet med 1st yr standing.

#### 531 Microscopic and Developmental Anatomy II P 4

Correlated study of the development, microscopic structure, and ultrastructural morphology of organ systems.

Wi Qtr. Prereq: Vet med 1st yr standing.

#### 540 Structure and Function of Cells P 5

Introduction to structure and function at cellular level including physiological principles of homeostasis, energetics, metabolism, enzymes, nutrition, and growth.

Au Qtr. Prereq: Vet med 1st yr standing.

#### 550 Comparative Biology of Disease P 5

An interdisciplinary study of the interactions between disease producing agents, body systems, tissues, cells, subcellular units, and selected drugs.

Prereq: Vet med 1st yr standing.

##### 550.01 Comparative Biology of Disease I

Wi Qtr.

##### 550.02 Comparative Biology of Disease II

Wi Qtr.



**560 Introduction to Veterinary Profession: Ethics and Jurisprudence P 1**

**560.01 Introduction to Veterinary Professions: Ethics and Jurisprudence**

Problems faced by the practicing veterinarian in relation to the Ohio code, the law, ethics, and communications.

Au Qtr. Prereq: Vet Med 1st yr. standing.

**560.02 Ethics and Jurisprudence in the Veterinary Career**

Focus on analysis of ethical and legal issues associated with the art of veterinary medicine practice and establishment of optimal veterinarian-client-patient relations.

Wi Qtr. Prereq: Vet Med 1st yr. standing.

**561 Pharmacology P 3**

Basic principles of pharmacology, therapeutics, and chemotherapy of disease.

Sp Qtr. 3 cl. Prereq: Vet med 1st yr standing.

**562 Introduction to Anesthesiology P 2**

Introduction to anesthesia.

Sp Qtr. Prereq: Vet med 2nd yr standing.

**563 Introduction to Surgery P 2**

Introduction to surgery.

Sp Qtr. 2 cl, or 1 cl and 1 lab. Prereq: Vet med 2nd yr standing.

**564 Clinical Veterinary Therapeutics P 3**

Principles of chemotherapy of bacterial, fungal, viral, and parasitic infections; application of basic principles for chemotherapy of neoplastic disease.

Au Qtr. 3 cl. Prereq: Vet Med 3rd yr standing.

**600 Cardiovascular System P 6**

A comparative study of the structure, function, and dysfunction of the cardiovascular system including arrhythmias, abnormal flow, congenital disease, etiologic agents, diagnostic methods, and therapeutic approaches.

Au Qtr. Prereq: Vet med 2nd yr standing.

**601 Respiratory System P 5**

A comparative study of the structure, function, and dysfunction of the respiratory system including reaction to injury, ventilation defects, pneumonias, neoplastic disease, radiological diagnosis, and therapeutic approaches.

Au Qtr. 5 cl. Prereq: Vet med 2nd yr standing.

**602 Urinary System P 6**

A comparative study of the structure, function, and dysfunction of the urinary system including diseases of the kidney, bladder, and urethra, and their diagnosis and treatment.

Wi Qtr. Prereq: Vet med 2nd yr standing.

**603 Neurobiology P 6**

Comparative study of structure, stressing functional anatomy, normal physiology, and the examination of the nervous system.

Sp Qtr. 6 cl. Prereq: Vet med 1st yr standing.

**604 Endocrine System P 5**

A comparative study of the structures, function, and dysfunction of the endocrine system including diseases of each endocrine organ and their relationships to whole body functions.

Sp Qtr. 5 cl. Prereq: Vet med 1st yr standing.

**605 Reproductive System P 5**

A comparative study of the structure, function, and dysfunction of the reproductive system including etiologic, pathogenic, pathophysiologic, therapeutic, and preventive aspects of reproductive diseases.

Sp Qtr. 5 cl, 2 labs. Prereq: Vet med 2nd yr standing.

**606 Integumentary System P 5**

A comparative study of the structure, function, and dysfunction of the integumentary system including important infectious and parasitic diseases, diagnosis, treatment, and prevention.

Sp Qtr. 5 cl, or 4 cl and 2 labs. Prereq: Vet med 2nd yr standing.

**607 Musculoskeletal System P 6**

A comparative study of the structure, function, and dysfunction of the musculoskeletal system including congenital and acquired diseases, their radiographic diagnosis, treatment, and prevention.

Wi Qtr. 6 cl. Prereq: Vet med 2nd yr standing.

**608 Non-Mammalian and Avian Medicine P 2**

Basic study of avian, reptile, amphibian and fish medicine including anatomy, physiology, pathogenesis of disease, diagnosis, treatment, and disease prevention and control

Sp Qtr. Prereq: Vet Med 2nd yr standing.

**609 Digestive System**

Prereq: Vet med 2nd yr standing.

**609.01 Digestive System I P 6**

A comprehensive study of the gastrointestinal system of domestic animals.

Wi Qtr. 6 cl or equiv lab hrs.

**609.02 Digestive System II P 2**

Comprehensive study of the pathogenesis, diagnosis, epidemiology, and modern concepts of sustainable parasite control in the gastrointestinal system.

Sp Qtr. 2 cl.

**611 Veterinary Public Health P 4**

Introduction to the epidemiology and importance of the various zoonoses common to both animals and humans with emphasis on the role of the veterinarian in the prevention and control of these diseases; meat/food hygiene and environmental factors affecting health.

Wi Qtr. 3 cl, 2 lab hrs. Prereq: Vet med 3rd yr standing.

**612 Introduction to Veterinary Ophthalmology P 2**

Development of anatomy, comparative anatomy, histology, and physiology of the eye and adnexa of domestic animals will be studied.

Au Qtr. Prereq: Vet med 3rd yr standing.

**615 Small Animal Medical and Surgical Techniques P 4**

Clinical instruction in medical and surgical techniques; application of surgical techniques to treatment of diseases of small animals.

Au, Wi Qtrs. 1 cl, 16 lab hrs/wk. Prereq: Vet Med 3rd yr. standing. Not open to students with credit for 620.

**616 Food Animal Medicine Techniques and Diagnostic Procedures P 3**

Laboratory instruction in microbiology, parasitology, and radiology; instruction and self-study in minor techniques for large animals.

Au, Wi Qtrs. 9-13 lab hrs. Prereq: Vet med 3rd yr standing.

**617 Basic Equine Medical and Surgical Procedures P 1**

Laboratory and self-instruction in equine techniques.

Au, Wi Qtrs. 3-6 lab hrs. Prereq: Vet med 3rd yr standing.

**618 Hemic-Lymphatic System P 5**

A comparative study of the hemic-lymphatic system with emphasis on dysfunction immunologic diseases diagnosis, treatment and prevention of hemopoietic disease.

Au Qtr. Prereq: Vet med 2nd yr standing.

**619 Alternative to Small Animal Medical and Surgical Techniques P 4**

Surgical instruction to third-year veterinary students who are opposed to performing surgery on animals acquired for that purpose.

Au Qtr. 3-wk rotation during end-of-quarter break. Prereq: Vet med 3rd yr standing.

**629 Small Animal Spay-Neuter Program P 2**

Live animal surgical and anesthetic technical experience for third-year veterinary students.

Sp Qtr. 12-15 lab hrs and 4 hrs assigned self-instruction. Prereq: Vet med 3rd yr standing. This course is graded S/U.

**640 Veterinary Toxicology P 2**

Study of toxic substances affecting domestic animals including major types of poisons, sources, mechanisms of action, diagnosis, and treatment

Au Qtr. 2 cl Prereq: Vet med 3rd yr standing.

**646 Laboratory Animal Medicine P 2**

Study of diseases of laboratory animals with a focus on prevention, control, and eradication.

Au Qtr 2 cl. Prereq: Vet med 3rd yr standing.

**689 Practicum in Veterinary Medicine P 0**

Applied veterinary experiences offered to fourth year veterinary students which enhance their skills in areas such as medicine, surgery, dentistry, research, etc.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing on elective qtr. This course is graded S/U.

**696 Advanced Studies in Veterinary Medicine P 1-6**

Advanced studies in areas of general veterinary medicine such as international veterinary medicine, education, etc.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 1st yr standing in Vet med. This course is graded A-E.

**700 Applied Veterinary Medicine**

A series of clinical studies offered fourth-year veterinary medical students as part of the core curriculum. Staff.

Su, Au, Wi, Sp Qtrs. Clinics, seminars, case discussions, and 24-hr patient care responsibilities. Prereq: Vet med 4th yr standing. Repeatable to a maximum of 32 cr hrs.

**700.01 Outpatient Clinics P 3**

Clinical instruction in client relations, diagnosis, treatment, and prevention of diseases in out-patients.

**700.02 Small Animal Medicine P 5**

Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of small companion animals.

**700.03 Small Animal Surgery P 5**

The application of principles of surgery to treatment of diseases of companion small animals.

**700.04 Food Animal Medicine and Surgery P 5**

Application of principles of diagnosis, treatment, and prevention of diseases of food animals.

**700.05 Equine Medicine and Surgery P 5**

Application of principles of diagnosis, treatment, and prevention of diseases of equine patients.

**700.06 Field Service P 5**

The application of the principles of management, diagnosis, treatment, and prevention of disease in farm and exotic animals in the environment in which they are produced.

**700.07 Radiology P 3**

Application of radiological principles to diagnosis of diseases of animals.

**700.08 Preventive Medicine P 5**

Intensive practical training in preventive medicine applied to public health and animal health; emphasis on herd health management, food hygiene, laboratory animals, public service, and control of livestock and poultry diseases.

Seminars, field trips, problem solving.

**700.09 Clinical Anesthesiology P 3**

4-8 clinic hrs per day with 24 hr patient care responsibility.

**700.11 Intensive Care Clinics P 2**

Application of principles of diagnosis and therapy to acutely ill companion animal patients.

**700.12 Veterinary Clinical Ophthalmology P 2**

Application of principles of diagnosis and treatment of diseases of the eye to patients of all species.

**700.14 Applied Pathology P 3**

Training in gross dissection and interpretation of gross and microscopic pathologic lesions in animals.

**700.15 Dermatology P 2**

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 4th yr standing.

**700.16 Emergency Medicine and Surgery P 2**

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 4th yr standing.

**700.18 Alternative to Preventive Medicine P 5**

Alternative to 700.08 in which pocket pets are substituted for experience with lab animals, and experience in the Raptor Ward or Ohio Dept. of Agriculture is substituted for work with poultry.

Similar to 700.08, plus 4 hrs/wk for pocket pet alternative and one qtr experience in Raptor Ward.

**Veterinary Pathobiology**

207 Goss Laboratory, 1925 Coffey Road, 292-5661

**640\* Fundamentals of Oncology P G 4**

Lecture/seminars covering aspects of oncology: chemical and biologic carcinogenesis, epidemiology, genetics, developmental biology, biochemistry, cell kinetics, clonality, metastases, hormonal and immunology factors, and therapy. Capen and Barth.

Wi Qtrs. Prereq: Permission of instructor. Offered in cooperation with Pathology.

**693 Individual Studies P G 1-10**

Laboratory, library, conference, and reports concerning animal disease problems. Capen and graduate faculty.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to maximum of 50 cr hrs. This course is graded S/U.

**710 Applied Veterinary Clinical Pathology P 1**

Designed to familiarize the senior veterinary student with the preparation and cytologic interpretation of blood films, body cavity fluids, and tissue aspirations and imprints. Wellman.

Su, Au, Wi, Sp Qtrs. Prereq: Vet med 4th yr standing on elective qtr.

**740 Laboratory Medicine P G 1-10**

Advanced training in veterinary hematology, cytology, and clinical chemistry; independent study, use of laboratory methods for the characterization of clinicopathologic change in hospitalized patients. Kociba and graduate faculty.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: DVM degree and grad standing. Repeatable to a maximum of 35 cr hrs.

**760 Specialized Study in Veterinary Medicine P 1-16**

Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing and permission of instructor. To be taken during elective qtr. Cross-listed in all veterinary medicine depts. Repeatable to a maximum of 16 cr hrs. Students must serve at least 4 wks in one experience to receive minimum elective cr. This course is graded S/U.

**795 Seminar in Veterinary Clinical Pathology P G 1, 2**

Case presentation with emphasis on clinicopathologic correlations; specimen evaluation, literature searches, preparation of clinicopathologic case reports, and preparation of visual aids. Kociba and graduate faculty.

Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

**796 Advanced Studies in Veterinary Pathobiology****796.01 Applied Pathology P G 2**

Correlation of functional morphological, and chemical abnormalities in disease of domestic and companion animals. Weisbrode.

Sp Qtr. Prereq: Permission of instructor.

**796.05 Applied Veterinary Medical Virology P G 3**

Major viral pathogens of domestic animals are discussed and illustrated; principles of virology applicable to the recognition, differentiation, and prevention of diseases of animals are presented. Lairmore.

Wi Qtr. Prereq: Permission of instructor.

**796.06 Diseases of Poultry and Game Birds P G 3**

A study of the etiology, recognition, prevention, and control of the important diseases of poultry and related game birds. Swayne and Long.

Au, Wi Qtrs.

**796.07 Current Topics of Veterinary Immunology P G 3**

Discussion of modern topics in immunobiology as it relates to domestic animals.

**796.08 Advanced Gross Pathology P G 1-5**

Advanced training in gross dissection and interpretation of gross lesions in animals. Graduate faculty.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing in vet med.

**796.09 Basic Histopathology P G 3**

Introductory basic pathological changes emphasizing identification, correlation to gross appearance, significance, and resolution. Weisbrode.

Wi Qtr. Prereq: 2nd yr standing. Each student will be provided a microscopical slide study set and a microscope.

**810\* Advanced Systemic Pathology I G 3,5**

An advanced study of animal diseases as they affect all organ systems of the body. Stromberg.

Au Qtr. Prereq: Permission of instructor.

**811 Advanced Systemic Pathology II G 3,5**

Advanced study of animal diseases as they affect all organ systems of the body. Stromberg.

Wi Qtr. 3 2-hr cl. Prereq: 810.

**812 Advanced Systemic Pathology III G 3,5**

Advanced study of animal diseases as they affect all organ systems of the body. Stromberg.

Sp Qtr. 3 2-hr cl. Prereq: 810 and 811.

**815 Veterinary Surgical Pathology G 3-5**

Biopsy methods and diagnosis; surgical specimens are studied, and emphasis is placed upon the correlation of lesions and functional pathology. Capen and graduate faculty.

Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in grad program in vet path; DVM and experience in basic histopathology. Not open to students with credit for 715. Repeatable to a maximum of 40 hrs.

**820\* Advanced Avian Pathobiology and Diagnostic Medicine P G 3-5**

Application of virology, microbiology, epidemiology, and gross, histologic, and ultrastructural pathology in understanding the pathology of avian diseases and their diagnosis. Swayne.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: Permission of instructor.

**850 Seminar in Veterinary Pathobiology G 1-2**

Weekly lectures on selected pathobiology topics and weekly histopathology slide seminars. Capen and graduate faculty.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 40 cr hrs.

**999 Research in Veterinary Pathobiology G 1-18**

Research for thesis or dissertation purposes only. Capen and graduate faculty.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Veterinary Physiology and Pharmacology

309 Sisson Hall, 1900 Coffey Road, 292-1391

**410 Animal Physiology U 5**

Consideration of concepts and principles involved in the function of various body systems in domestic animals. Stradley.

Au Qtr. 5 cl. Prereq: Chem 102 or 122.

**411 Animal Physiology U 5**

Comparative study of physiological concepts and principles involved in endocrinology, metabolism, and reproduction in various species of domestic animals. Stradley.

Wi Qtr. 5 cl. Prereq: Chem 102 or 122.

**610\* Humane Preparation and Use of Animals for Physiologic Investigation U G 3**

Selection of species, pre-anesthetics, anesthetics, minor surgical procedures, cardiac catheterization, radiography, postmortem examination, and drug therapy as applied to physiologic investigations. Hamlin.

Sp Qtr. Prereq: Advanced standing in zoology or Physiol 600 or equiv; permission of instructor. Not open to vet med students.

**693 Individual Studies P G 3-15**

Laboratory and library investigations concerning animal physiology and pharmacology problems. Staff.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**696 Advanced Studies in Veterinary Physiology and Pharmacology P G 1-6**

Staff.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**730\* Endocrinology P G 5**

A study of functions of the thyroid, parathyroid, pituitary, adrenal, pancreas, gonads, and other organs with possible endocrine functions. Saiduddin and Brooks.

Au Qtr. 4 cl, 1 lab. Prereq: Physiol 312 or equiv, organic chem, and permission of instructor.

**740 Principles of Toxicology I G 3**

Introduction to the principles of toxicology and the factors that influence the expression of drug and chemical induced toxicological effects on major organ systems.

Au Qtr. 3 cl. Prereq: Biochem 613 or equiv; Physiol 312 or equiv. Not open to students with credit for Dairy Sc 740 or Pharmacy 740. Cross-listed in Dairy Sc and Pharmacy.

**741 Principles of Toxicology II G 5**

Toxicological effects of major classes of chemicals and current issues in toxicology, including air pollution, water quality, and hazardous waste.

Wi Qtr. 5 cl. Prereq: 740 or Dairy Sc 740 or Pharmacy 740; Biochem 511 or equiv, Physiol 602 or equiv. Not open to student with credit for Dairy Science 741. Cross-listed in Dairy Science and Pharmacy.

**750 Gas Exchange in the Mammalian Lung P G 2**

Introduction to pulmonary ventilation, diffusion of gases and pulmonary blood flow, and how lung structure is optimized for efficient gas exchange. Olson.

Su Qtr. 2 1-hr cl. Prereq: DVM or enrollment in vet med, or permission of instructor.

**751 Professional and Ethical Issues in Biomedical Sciences G 3**

A discussion course based on case scenarios dealing with ethical issues facing biomedical researchers, such as publishing practices, confidentiality, mentoring, etc.

Wi Qtr. 2 1½-hr cl. Prereq: Currently enrolled in a graduate program in the biomedical sciences. Cross-listed in Pharmacology. Graded S/U.

**760 Specialized Study in Veterinary Medicine P 1-16**

Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals. Staff.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing and permission of instructor. To be taken during elective qtr. Cross-listed in all veterinary medicine depts. Repeatable to a maximum of 16 cr hrs. Students must serve at least 4 wks in one experience to receive minimum elective cr. This course is graded S/U.

**778 Applied Veterinary Pharmacology P G 3**

General principles of pharmacology, emphasizing those drugs used in the practice of veterinary medicine; application of various techniques and methods of evaluating drug response in animals. Strauch.

Wi Qtr. 2 cl, 2 hr lab. Prereq: Vet med 2nd yr standing or permission of instructor.

**780\* Clinical Pharmacology of Antimicrobial Drugs P G 3**

A detailed study of the basic principles and clinical pharmacology of antimicrobial and antiparasitic drugs in veterinary medicine; special consideration given to toxicities, drug-drug interactions and idiosyncrasies. Sp Qtr. 3 cl. Prereq: Vet med 2nd, 3rd, 4th yr standing or grad standing.

**781\* Principles of Veterinary Clinical Pharmacology P G 3**

Principles of clinical pharmacology and application of kinetic parameters to drug therapy in domestic animals; basis for choice of drug and dosage regimen.

Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd, 4th yr standing, or grad standing.

**790 Comparative Cardiovascular Physiology P G 3**

Comparative electrocardiography emphasizing fundamentals and clinical interpretations. Hamlin.

Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd, or 4th yr standing; or permission of instructor.

**791 Heart Sounds, Murmurs, and Pulse Curves P G 3**

Comparative hemodynamics and cardiovascular sound emphasizing apex and echocardiograms and pressure pulses, origins of heart sounds and murmurs, clinical interpretation and clinical pathological correlation. Hamlin.

Wi Qtr. 3 cl. Prereq: Vet med 2nd, 3rd, or 4th yr standing or permission of instructor.

**792\* Signs, Symptoms, and Treatment of Cardiopulmonary Disease P G 3**

Advanced comparative cardiovascular physiology with emphasis upon circulatory response to stress of various congenital and acquired cardiovascular defects. Hamlin.

Sp Qtr. 3 cl. Prereq: Vet med 2nd, 3rd, or 4th yr standing; or permission of instructor.

**794 Group Studies P G 1-6**

Group studies course in areas of comparative physiology and pharmacology. Staff.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

**795\* Advanced Comparative Electrocardiography P G 3-5**

Cellular and cardiac electrophysiologic and clinical features of complex cardiac arrhythmias and conduction disturbances. Hamlin.

Wi Qtr. 3 cl and additional work for 5 cr hrs. Prereq: 790 or permission of instructor.

**796\* Techniques in Comparative Reproductive Physiology and Pharmacology P G 3**

Laboratory methods in the study of various phenomenon associated with reproduction and pharmacology of sex steroids and gonadotropins. Lin.

Sp Qtr. 3 2-hr labs. Prereq: Vet med and Med 3rd and 4th yr standing, grad, or permission of instructor.

**799 Seminar P G 2**

Lectures and conferences on selected topics in veterinary physiology and pharmacology. Staff.

Wi, Sp Qtrs. 1 2-hr conf and lec. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

**999 Research in Veterinary Physiology and Pharmacology G 1-18**

Research for thesis or dissertation purposes only. Staff.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Veterinary Preventive Medicine

239 Sisson Hall, 1900 Coffey Road, 292-1206

**650 Methods for the Critical Review of Biomedical Literature P G 2**

Methods and practice in analyzing strengths and weaknesses of published research and clinical papers; methods and practice in writing scientific critiques. McClure.

Au, Wi Qtrs. 1 2-hr cl. Prereq: Professional student in any health discipline or grad standing. This course is graded S/U.

**693 Individual Studies P G 1-6**

Laboratory and library investigations of animal disease problems involving veterinary preventive medicine. Staff.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

**696 Advanced Studies in Veterinary Preventive Medicine P G 1-6**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

**700 Molecular Epidemiology of Infectious Diseases P G 3**

Provides students with the knowledge and skills to study disease outbreaks in livestock using molecular biology techniques.

Sp Qtr. 1 1 1/2-hr cl. Prereq: 780, Prev Med 800, or permission of instructor.

**711 Applied Veterinary Medicine Options P 2 or 3**

A series of field studies offered as electives for fourth year veterinary students to arrange into an elective program in conjunction with a faculty adviser.

Su, Au, Wi, Sp Qtrs.

**711.01 Herd Health Problems**

Field instruction and experience in comprehensive disease prevention, nutritional, reproductive, and economic services in modern confinement and conventional livestock production.

**711.02 Public Service Problems**

Instruction and experience in animal and human disease (zoonoses) prevention, control, and eradication as provided by public service veterinarians in local, state, and national agencies. Neer.

**711.03 Laboratory Animal Problems**

Instruction and experience in diagnosis and prevention of laboratory animal disease in operating, breeding, and experimental colonies of various species. McClure.

**715\* Veterinary Public Service P G 3**

Practice of public service directed at animal and public health in international, national, state, and local agencies with emphasis on planning, decision making, and budgeting; interaction of veterinarian and other health workers.

Au Qtr.

**730 Immunology of Parasitic Infections P G 3**

A discussion of the role of immunity in the production, course, pathogenicity, diagnosis, and control of parasitic infections of man and/or domestic animals. Barriga.

Au Qtr. 2 cl. Prereq: Basic course in parasitology and immunology; permission of instructor. Repeatable to a maximum of 6 cr hrs. Content varies according to major interests of class. Protozoa-arthropods taught in odd yrs; helminths in even yrs. Not open to students with credit for Micrbiol 730. Cross-listed in Microbiology.

**750 Veterinary Practice and Hospital Management P 3**

Basic principles of hospital and practice management including insurance, partnerships, corporations, accounting, taxes, employees, and general management procedures.

Wi Qtr. 3 cl. Prereq: Vet med 3rd or 4th yr standing.

**760 Specialized Study in Veterinary Medicine P 1-16**

Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing and permission of instructor. To be taken during elective qtr. Cross listed in all veterinary medicine depts. Repeatable to a maximum of 16 cr hrs. Students must serve at least 4 wks in one experience or receive minimum elective cr. This course is graded S/U.

**780\* Veterinary Epidemiology P G 3**

The use of descriptive and analytical epidemiologic methods in the solution of infectious and noninfectious disease problems affecting various animal populations. Hoblet.

Wi Qtr. 3 cl. Prereq: 764, Prev med 800 or equiv, or enrolled as prof or grad student in med or vet med.

**785 Biological Research Techniques P G 3**

Lectures and laboratory exercises in laboratory techniques commonly used in biological research. Bech-Nielsen.

Su, Au, Wi, Sp Qtrs. 2 2-hr cl. and lab. Prereq: Advanced standing in biological sciences, Micrbiol 601, 602, or equiv, and permission of instructor.

**796 Advanced Studies in Veterinary Preventive Medicine**

A course providing small group instruction in the topics designated.

Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs.

**796.01 Public Health-Organization, Environmental Health, Food-Borne Illnesses P G 1-8**

Deals with the application of public health principles to the solution of community problems. Gordon.

Au, Wi, Sp Qtrs 2 cl. Prereq: Permission of instructor.

**796.02 Prevention of Communicable Diseases P G 3**

Discussion of the epidemiology of communicable diseases of animals and fundamental approaches used by state and federal animal health agencies for prevention, control, and eradication. Bech-Nielsen.

Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd or 4th yr standing.

**796.03 Food-Borne Illnesses and Human Health P G 2-4**

Detailed study of principal zoonotic diseases transmitted by meat foods and food-borne intoxications and infections as related to personal hygiene of food handlers and sanitary food handling practices; the epidemiological approach to problem solving. Gordon.

Wi Qtr. Prereq: Vet med 3rd or 4th yr standing.

**796.04 Applied Food Hygiene P G 2-4**

Ante-mortem and post-mortem inspection procedures; disposition of diseased carcasses and parts—applied pathology as relates to meat inspection. Meat chemistry and processing; environmental sanitation; food microbiology. Gordon.

Au Qtr. Prereq: Vet med 3rd or 4th yr standing.

**796.05 Environmental Sanitation P G 3**

Students are provided an environmental sanitation book; discussions related to animal and food hygiene will concentrate on housing, ventilation, waste disposal, soil, water, air, etc. Gordon.

Sp Qtr. Prereq: Vet med 3rd or 4th yr standing.

**796.06 Disease Control in Dairy Cattle P G 4**

Principles and applications of preventive medicine in establishing and maintaining dairy herd health programs and laboratory practices in mastitis control. Hoblet.

Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: Vet med 3rd or 4th yr standing, and VM Coll 605.

**796.07 Laboratory Animal Medicine P G 2**

Diseases of sub-human primates, rodents, and exotic animals utilized in biomedical research and teaching; includes preventive medicine and public health as it applies to animal facilities. McClure.

Wi Qtr. 2 cl. Prereq: Vet med 3rd or 4th yr or grad standing or permission of instructor.

**796.11 Economics of Food Animal Health P G 3**

Discussion of economic principles as they apply to the evaluation of food animal preventive medicine programs and disease. Miller.

Sp Qtr. Prereq: Vet med 3rd or 4th yr standing.

**796.12 Literature of Production Medicine P G 1**

Review and discussion of current, selected referred literature in production medicine.

Au, Wi Qtrs. 1-hr cl. Prereq: Vet med 3rd or 4th yr or grad standing. Repeatable to a maximum of 2 cr hrs.

**850 Seminar in Veterinary Preventive Medicine**

Au, Wi, Sp Qtrs. Repeatable to a maximum of 3 cr hrs.

**850.01 Seminar in Veterinary Preventive Medicine G 1****850.02\* Topics in Veterinary Preventive Medicine G 1**

This course is graded S/U.

**850.03 Seminar in Veterinary Preventive Medicine G 2**

Group discussions of appropriate methodology and statistical analysis to meet objectives of investigators presenting seminars.

Au, Wi Qtrs. 2 cl. Prereq: Grad standing with DVM degree. Repeatable to a maximum of 4 cr hrs.

**999 Research in Veterinary Preventive Medicine G Arr 1-18**

Research thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Vocational Education, Comprehensive

208 Agricultural Administration Building, 2120 Fyffe Rd, 292-6321

**881 Vocational Education Seminar G 1-3**

An interdisciplinary seminar on state-of-the-art trends, and issues in comprehensive vocational education.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**893 Individual Studies in Vocational Education G 1-3**

Individual research and study on approved topics in comprehensive vocational education.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**894 Group Studies in Vocational Education G 1-3**

Selected topics directly related to comprehensive vocational education.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

**999 Research in Vocational Education G Arr**

Individual dissertation research on problems of significance in comprehensive vocational education.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of adviser. Repeatable. This course is graded S/U.

## Welding Engineering

124 Welding Engineering Laboratories, 190 West 19th Avenue, 292-6841

### 293 Individual Studies in Welding Engineering U 1-5

Topics in welding engineering of individual interest at the undergraduate level; must be arranged with a member of the department faculty.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

### 300 Survey of Welding Engineering U 3

Principles of welding engineering, including processes, materials effects, design, and quality assurance and codes.

Au Qtr. 3 cl. Prereq: Concur Physics 133, minimum CPHR of 2.00, acceptance as Welding Engineering major.

### 350 Introductory Welding Laboratory I U 1

Demonstration of a fundamental working knowledge of manual arc welding.

Au Qtr. 1 3-hr lab. Concur: 300 and acceptance as a Weld Eng major or written permission of chairperson.

### 351 Introductory Welding Laboratory II U 1

Demonstration of a fundamental working knowledge of semi-automatic arc welding.

Wi Qtr. 1 3-hr lab. Concur: 350 and acceptance as a Weld Eng major or written permission of chairperson.

### 400 Chemistry of Welding and Joining Processes U 3

Study of the chemical principles occurring during joining processes. Howden.

Sp Qtr. 3 cl. Prereq: 300.

### 489 Industrial Experience I U 1

Experience in an industrial organization and the submitting of an acceptable report on the work done.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. One qtr full time or equiv part-time field experience.

### 500 Physical Principles in Welding Engineering I U 3

Study of the application of electric and magnetic principles in welding engineering. Richardson.

Au Qtr. 3 cl. Prereq: 400 and concur; Elec Eng 300.

### 550 Physical Principles in Welding Engineering I—Laboratory U 1

Experimentation with the application of electric and magnetic principles in welding engineering. Richardson.

Au Qtr. 1 3-hr lab. Concur: 500.

### 557 Advanced Topics in Robotic Programming U G 1

Detailed projects are completed on a single robotic welding system; these projects help provide the understanding required to evaluate and select robotic systems for robotic welding systems. Richardson.

Au, Wi, Sp Qtrs. 1 cl, 3 lab hrs. Prereq: 656 or permission of instructor. Repeatable to a maximum of 2 cr hrs.

#### 557.01 Hobart L-10 Welding Robot

Seam tracking, interfacing an indexing table, and other advanced functions are used in developing a robot program to weld at a number of different fixtures.

#### 557.02 Milacron T3 Welding Robot

An arc welding production cell centered around the Milacron T3 robot is built; students consider jig placements, parameter selection for FCAW, and program development.

#### 557.03 American Welding Robot

Programming a robot for resistance welding; in this robot system the robot handles the part, not the welding process.

#### 557.04 CLOOS Welding Robot

Offline robot programming, seven axis welding system, and pulse GMAW are all available on this robot system; students will develop a robot program using all these functions.

#### 557.05 GMF Welding Robot

Offline robot programming using a graphics workstation allowing all the robot welding functions to be developed without halting production with the actual robot.

### 600 Physical Principles of Welding Engineering II U G 3

Study of physical principles involved in welding processes and nondestructive evaluation. Albright.

Wi Qtr. 3 cl. Prereq: 500, Eng Mech 440.

### 601 Welding Applications U G 3

Manual, semi-automatic arc welding processes with emphasis on process physics and applications. Albright.

Sp Qtr. 3 cl. Prereq: 600. Safety related equipment and procedures required.

### 605 Principles of Welding Process Control U G 3

Study of principles and practical application of control systems and control elements of welding processes. Richardson.

Sp Qtr. 3 cl. Prereq: 500.

### 610 Introduction to Welding Metallurgy U G 3

Application of physical metallurgy principles to nonequilibrium thermo/mechanical conditions associated with welding. Baeslack.

Sp Qtr. 3 cl. Prereq: MatSci&En 542.01. Safety related equipment and procedures required.

### 611 Welding Metallurgy I U G 3

Study of the metallurgy and welding of transformable steels. Howden.

Au Qtr. 3 cl. Prereq: 610 or permission of instructor. Safety related equipment and procedures required.

### 612 Welding Metallurgy II U G 3

Welding metallurgy and weldability of stainless steels, aluminum alloys and nickel- and cobalt-based superalloys; joining of polymers and polymer-based composites. Baeslack.

Wi Qtr. 3 cl. Prereq: 611. Safety related equipment and procedures required.

### 620 Welding Design I U G 3

Analysis and design of welded connections; interactions of the welds, structural members and applied loads; development of welding procedures for shop fabrication and field erection. Benatar.

Sp Qtr. 3 cl. Prereq: Eng Mech 440.

### 621 Welding Design II U G 3

Welding design of curved beams, stiffened plates, tubular frames, pressure vessels, torsional and rotating members, and machine bases; redesign of castings and forgings as weldments. Tsai.

Au Qtr. 3 cl. Prereq: 620 and Mech Eng 561.

### 631 Nondestructive Evaluation U G 3

Principles of nondestructive evaluation and inspection of materials and structures for engineering. Rokhlin.

Wi Qtr. 3 cl. Prereq: 3rd yr standing in ENG or equiv with written permission of instructor. Safety related equipment and procedures required.

### 634 Introduction to Ultrasonics U G 4

Ultrasonic waves in solids and fluids; ultrasonic generators and systems; physical ultrasonics; applications of ultrasonics. Adler.

Au Qtr. 4 cl. Prereq: Eng Mech 440; Math 255 or 415. Cross-listed in Engineering Mechanics.

### 635 Fundamentals of Radiography U G 4

Intended for engineering students who require knowledge of non-destructive testing methods; basic industrial radiographic methods such as film and real time, radiography, and image analysis are included. Rokhlin.

Sp Qtr. 3 cl, 1-hr lab. Prereq: 631 or written permission of instructor.

### 636 Fundamentals of Optical and Electromagnetic NDE U G 4

An introduction to basic principles of optics and electromagnetic fields and waves will be given with special emphasis on application of these principles to nondestructive evaluation. Adler.

Wi Qtr. 3 cl, 3-hr lab. Prereq: 631 or written permission of instructor.

### 637 Computer-Aided Design and Testing in NDE U G 3

Principles of computer modeling and design of NDE testing procedures; computer automation and measurements in NDE. Rokhlin.

Sp Qtr. 3 cl. Prereq: 631, Eng Graph 167; or written permission of instructor.

### 640 Welding Production U G 3

Cost-effective production of quality-welded structures. Dickinson.

Wi Qtr. 3 cl Prereq: 601; 4th yr standing in ENG or permission of instructor. Not open to students with credit for 642.

### 641 Welding Codes, Specifications, and Standards U G 3

Consideration of the welding requirements in a variety of industry and government documents including examples from the aircraft, automotive, maritime, piping, and pressure vessel fields. Green.

Sp Qtr. 3 cl. Prereq: 4th yr standing in ENG or permission of instructor.

### 651 Welding Process Applications - Laboratory U G 1

Laboratory experience in engineering aspects of welding.

Sp Qtr. 1 3-hr lab. Concur: 601.

### 655 Welding Process Controls I - Laboratory U G 1

Experimentation with the applications of process controls in welding engineering. Richardson.

Sp Qtr. 1 3-hr lab. Concur: 605.

**656 Robot Programming and Operations U G 1**

Types and applications of industrial robot systems; lab experience in robot operation and programming. Richardson.

Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq: Weld Eng or Ind Eng major and written permission of instructor.

**661 Welding Metallurgy I Laboratory U G 1**

Laboratory experience in welding metallurgy. Howden.

Au Qtr. 1 3-hr lab. Concur: 611.

**662 Analysis of Non-Ferrous and High Alloy Welds U G 1**

Characterization of weld structures in stainless steel, aluminum alloys, and nickel-based superalloys. Baeslaer

Wi Qtr. 1 3-hr lab. Prereq: 610; concur: 612.

**671 Nondestructive Evaluation - Laboratory U G 1**

Laboratory experience with principles, equipment, techniques, and interpretation of nondestructive tests. Rokhlin

Wi Qtr. 1 3-hr lab. Concur: 631.

**681 Nondestructive Evaluation Seminar U G 1**

Theory and application of nondestructive evaluation as presented in lectures by faculty, staff, graduate students, and guest speakers.

Au, Wi, Sp Qtrs. 1 cl. Prereq: 4th yr standing in ENG. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

**690 Capstone Welding Design I U G 2**

Group design projects building on all aspects of welding engineering. Benatar.

Wi Qtr. 2 cl. Prereq: 4th yr standing in weld eng.

**691 Capstone Welding Design II U G 2**

Group design projects building on all aspects of welding engineering. Benatar.

Sp Qtr. 2 cl. Prereq: 690.

**694 Group Studies in Welding Engineering U G 1-15**

The student must register for particular topics from fields of welding engineering, the topics, cr hrs, and instructor will be announced in quarter previous to the quarter offered.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

**695 Seminar in Welding Engineering U G 1**

Lectures and discussions covering a range of topics presented by faculty, graduate students, and guest speakers; includes visits to selected industrial sites.

Wi Qtr. 1 cl. Prereq: 4th yr standing in ENG or equiv with written permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

**701\* Solid State Welding U G 3**

The welding and joining of metals in the solid state with emphasis on processes and metallurgical principles. Albright.

Sp Qtr. 3 cl. Prereq: 600, Eng Mech 440, Mat Sc&En 542.01.

**703 Brazing and Soldering U G 3**

Brazing and soldering processes with emphasis on physical and metallurgical principles, materials, design, and application considerations. Howden.

Au Qtr. 3 cl. Prereq: 504 or permission of instructor.

**704 High Energy Density Welding Processes U G 3**

Theory and practices in laser, electron beam, plasma, and other high energy density welding processes; process demonstrations. Albright.

Au Qtr. 3 cl. Prereq: 600.

**705+\* Advanced Welding Process Control Systems U G 3**

Principles of continuously variable and digital control systems for manual, mechanized, automatic, and feedback operation of arc, resistance, and advanced welding processes. Richardson.

Wi Qtr. 3 cl. Prereq: 605, Math 255 or 415.

**706 Joining of Plastics and Composites U G 3**

Theory and practice in joining of polymers and polymeric composites, including processes and methods for welding, mechanical joining, and adhesive bonding. Benatar.

Au Qtr. 3 cl. Prereq: 620 or equiv.

**713 Joining of Specialty Metals U G 3**

Theory and practice of joining specialty metals is presented, with emphasis on joinability, joining processes, and procedures and applications. Baeslack.

Wi Qtr. 2 1-hr cl, 1 2-hr lab. Prereq: 610

**714 Weldability U G 3**

Weldability of alloy systems—steels, stainless steels, nickel, aluminum, and titanium alloys—with reference to basic metallurgical phenomena, weldability testing, and interpretation; individual projects and presentations. Baeslack.

Sp Qtr. 3 cl. Prereq: 611; prereq or concur: 612.

**723 Analysis of Welding Systems U G 3**

Development of an analytical and empirical base for the selection of optimum parameters in the design and fabrication of welded structures. Tsai.

Au Qtr. 3 cl. Prereq: 620.

**732 Ultrasonic Nondestructive Evaluation U G 4**

Principles of ultrasonic wave interaction with material structures with emphasis on nondestructive measurements of material discontinuities, properties, and non-uniformities. Adler.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 631 or permission of instructor, and Math 255 or 256 or 416.

**733 Electromagnetic Nondestructive Evaluation U G 4**

Fundamentals of electromagnetic fields and waves with emphasis on eddy current NDE methods; electromagnetic generation of ultrasonic waves and optical methods. Adler.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 631 or permission of instructor, and Math 255 or 256 or 416.

**736 Health and Safety U G 3**

Major health and safety hazards associated with welding and cutting; radiation, fumes, gases, and noise; discussion of hazard origin, technological control, physiological effects, and regulatory control. Howden.

Au Qtr. 3 cl. Prereq: 601 or permission of instructor.

**740 Fitness-for-Service of Welded Structures U G 3**

The interrelationship of design, fabrication, nondestructive evaluation, fracture mechanics, and reliability concepts in establishing the overall fitness-for-purpose of welded structures. Tsai.

Au Qtr. 3 cl. Prereq: 620 or permission of instructor.

**755+\* Welding Process Control Laboratory U G 1**

Laboratory experiments in basic instrumentation and control systems for welding processes such as arc, resistance, electron-beam, and others. Richardson.

Wi Qtr. 1 3-hr lab. Concur: 705.

**793 Individual Studies in Welding Engineering U G 1-15**

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**795 Graduate Seminar U G 1**

Presentations and discussion by graduate students and involved outside speakers on thesis research and current problems in welding engineering.

Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad or sr standing in weld eng. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

**799 Thesis U 2-15**

Undergraduate research providing an opportunity to publish a report in appropriate technical publications.

Au, Wi, Sp Qtrs. Prereq: 4th yr standing in ENG and permission of instructor. Repeatable to a maximum of 15 cr hrs.

**801\* Welding Arc Physics G 3**

Theoretical study of the physics of welding arcs including processes of current maintenance and heat dissipation, arc radiation and spectre, arc stability, magnetic fields, and flows. Richardson.

Wi Qtr. 3 cl. Prereq: 600.

**804 Laser Material Processing Colloquium G 3**

Advanced topics in laser material processing. Colloquium format with student presentations and discussion. Albright.

Sp Qtr. 3 cl.

**806\* Advanced Welding of Plastics and Composites G 3**

Theoretical study of welding of thermoplastics and composites, including analysis of the basic welding steps and modeling, optimization and control of welding processes. Benatar.

Wi Qtr. 3 cl. Prereq: 706 or permission of instructor.

**821 Residual Stresses and Distortion in Weldments G 3**

A study of the formation mechanisms of residual stresses and distortions; mathematical formulations and experimental analysis methods for distortion control. Tsai.

Wi Qtr. 3 cl. Prereq: 723.

**835 Advanced NDE Methods G 4**

Modern physical principles as basis for quantitative nondestructive evaluation techniques; includes wave-matter interaction, ultrasound interaction with light, optical, and acoustical holography. Adler.

Au Qtr. 3 cl, 1 3-hr lab. Prereq: 631, 732, and 733, or permission of instructor; and Math 512.

**894 Group Studies in Welding Engineering G 2-5**

Special topics in welding engineering; the particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**999 Research in Welding Engineering G Arr**

Research for thesis or dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

## Women's Studies

286 University Hall, 230 North Oval Mall, 292-1021

**201 Introduction to Women's Studies in the Humanities U 5**

Examination of the feminist viewpoint through interdisciplinary studies in the humanities; the relationship of feminist concepts, methods, and analyses to traditional, academic disciplines in humanities.

Su, Au, Wi, Sp Qtrs. 5 or 2 2½-hr cl. H201 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 202 or 210. BER/GEC/LAR course.

**210 Women, Culture, and Society U 5**

Interdisciplinary analysis of women, culture, and society; topics include cultural images, socialization, media, sexuality, sexual orientation, work, family, politics, violence, inequality, and racial diversity.

Su, Au, Wi, Sp Qtrs. 5 cl or 2 2-hr cl. H210 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 201 or 202. BER/GEC/LAR course.

**The Black Woman: Her Role in the Liberation Struggle**

See Black St 230.

**Language and Gender**

See Linguist 230.

**History of Women in the United States**

See History 237.

**294 Group Studies U 1-5**

Special studies not otherwise offered.

5 cl. Repeatable to a maximum of 15 cr hrs.

**H296 Topics in Women's Studies U 5**

In-depth study in women's studies focusing on current issues in feminist analysis.

Repeatable to maximum of 10 cr hrs.

**299 Introduction to Feminist Analysis U 5**

Introduction to principles of feminist analysis as they apply to a range of contemporary issues and institutions.

Sp Qtr. 2 2-hr cl. Prereq: One of the following: 201, 202, 210, 215, 367.01, 367.04.

**Women in East Asian and Asian-American Literature**

See Comp Std 314.

**Women and Religion**

See Comp Std 315.

**317 Women and Film U 5**

Representations of women as sex objects, starlets, social activists, and militant feminists in film; cinematic techniques and devices in films about or by women.

2 2-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for Comp Std 317. Cross-listed in Comparative Studies in the Humanities. BER/GEC/LAR course.

**325 Issues in Woman's Health U 5**

An interdisciplinary inquiry into the issues affecting women's health and the politics of gender in the medical health care profession.

Su, Au, Wi, Sp Qtrs. 2 2½-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for 300.

**326 Women and Addiction: A Feminist Perspective U 5**

An interdisciplinary feminist focus on addictive consequences of sex-role socialization, substance abuse, addiction in intimate relationships, and eating disorders; medical/social consequences of addiction among women.

Su, Au, Wi, Sp Qtrs. 2 2½-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for 301.

**Communication and Gender in Interpersonal and Organizational Settings**

See Communic 332.

**350 Feminist Perspectives on Women and Violence U 5**

Use of a feminist, interdisciplinary approach to analyze selected national or international issues of interpersonal and institutionalized violence in which women are victims or perpetrators.

Wi Qtr. 2 2-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for this topic under 494.

**Communication, Gender, and Society**

See Communic 362.

**Women and Music**

See Music 344.

**367 Second Writing Course U 5**

Prereq: English 110 or 111 or equiv, and soph standing. GEC/LAR courses.

**367.01 U.S. Women Writers: Text and Context**

Writing and analysis of U.S. women's experience, with emphasis on interdisciplinary relationships between literature and U.S. women's socio-political history.

Su, Au, Wi, Sp Qtrs. 5 cl or 2 2½-hr cl. H367.01 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 215 or 367 or H367.

**367.04 Black Women Writers: Text and Context**

Writing and analysis of black women's literary representations of issues in United States social history.

Sp Qtr. 2 2-hr cl. Not open to students with credit for 215 or Blk Stds 367.04. Cross-listed in Black Studies.

**370 Varieties of Female Experience: Lesbian Lives U 5**

A survey of cultural, social, and political issues related to historical and contemporary lesbian experience in the United States.

Wi Qtr. 2 2-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. GEC course.

**Women in Ancient Hebrew Literature**

Hebrew 374.

**Women Artists of the Western World.**

See Hist Art 400.

**Sociology of Women**

See Sociol 435.

**489 Women's Studies Internship U 1-5**

Community work with agencies and organizations serving women; evaluation of policy decisions from a feminist perspective.

Su, Au, Wi, Sp Qtrs. Prereq: 299 and at least 10 additional cr hrs of wom stds course work, or permission of instructor. Repeatable to a maximum of 5 cr hrs. Each hr of cr corresponds to 3 hrs per wk of internship for 10 wks. This course is graded S/U.

**494 Group Studies U 2-5**

Special studies not otherwise offered; topic varies; students should consult department current course listing.

Au, Sp Qtrs. Arr. Prereq: 201 or 202 or permission of instructor. Repeatable to maximum of 15 cr hrs including cr hrs earned in 694.

**505 Women's Worlds: Cross-Cultural Analysis U G 5**

An interdisciplinary, cross-cultural feminist analysis of women's roles, status, history, and cultural productions in the Third World.

Au Qtr. 2 2-hr cl. Prereq: 10 cr hrs in wom stds course work or permission of instructor. Not open to students with credit for 597.

**Women in Antiquity**

See Anthrop 508.

**510 American Women's Movements U G 5**

An interdisciplinary analysis of the American women's movements, including historical, literary, sociological, and theoretical perspectives.

Au, Sp Qtrs. 2 2½-hr or 5 cl. Prereq: 10 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for 400. GEC course.

**Women, Crime, and the Legal System**

See Sociol 510.

**Women and Politics**

See Polit Sc 512.

**Women and the Law**

See Polit Sc 514.



**520 Women of Color and Social Activism U G 5**

Examination of multiple forms of social activism among women of color from various parts of the world concerning local, national, and international issues.

Au, Sp Qtr. 2-2-hr cl. Prereq: 10 cr hrs of wom stds course work or permission of instructor. GEC course.

**Women in the Western World: Ancient Civilization to the Industrial Revolution**

See History 523.

**Women in the Western World: the Industrial Revolution to the Present**

See History 524.

**Psychology of Women**

See Psych 543.

**550 Introduction to Western Feminist Theory U G 5**

An introduction to and analysis of major texts of Western feminist theory as it has developed and changed since the Enlightenment.

Wi Qtr. 5 cl or 2 2½-hr cl. Prereq: 10 cr hrs of wom stds course work or permission of instructor. GEC/LAR course.

**575 Issues in Contemporary Feminist Theory U G 5**

Examination of particular contemporary issues which have crucial implications for feminist inquiry (topics vary).

Sp Qtr. 2 2½-hr cl. Prereq: 10 cr hrs of wom stds course work or permission of instructor. Repeatable to a maximum of 10 cr hrs.

**Women in Literature**

See English 592.

**Women, Culture, and Development**

See Anthropol 597.02.

**Biology of Human Diversity: Race, Gender, and Ethnicity**

See Biology 597.

**599 Senior Seminar U G 5**

Intensive study of the varieties of feminist theory through readings and research.

Sp Qtr. 2-2-hr cl. Prereq: Sr standing and 10 cr hrs of women's studies course work or permission of instructor.

**Women's Sport History**

See Phys Ed 610.

**620 Topics in Feminist Studies U G 5**

Interdisciplinary in-depth analysis of selected topics in feminist research and interpretation; topic varies quarterly.

Su, Au, Wi, Sp Qtrs. 2 2½-hr cl or 5 cl. Prereq: 201 or 202, and at least 10 additional cr hrs in wom stds or written permission of instructor. Repeatable to a maximum of 15 undergrad cr hrs and 15 grad cr hrs. Contact the Center for Women's Studies for information.

**Special Topics in Cultural Anthropology: Anthropology of Women**

See Anthropology 620.02.

**Women in French Literature**

See French 663.

**Topics in Women's History**

See History 676.

**693 Individual Studies U G 1-5**

Students may register for individual directed study in subjects not covered in regular course work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr standing or above; permission of instructor. Repeatable to a maximum of 15 cr hrs. No more than 5 cr hrs may be applied to women's studies major or minor. This course is graded S/U.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**700 Introduction to Graduate Studies G 2**

Introduction to women's studies as an academic field of study and an orientation to the center's graduate program, facilities, resources, and people.

Au Qtr. 1 2-hr cl. Prereq: Grad standing in wom stds. This course is graded S/U.

**701 Introduction to Feminist Scholarship G 5**

Introduction to the major debates and methodological issues that have shaped feminist scholarship and the interdisciplinary field of women's studies.

Au Qtr. 2-2-hr cl. Prereq: 10 cr hrs of wom stds course work and permission of instructor.

**710 Women: Race, Ethnicity, and Class G 5**

Examination of diversity among women in the U.S. based on race, ethnicity, and class, and the ways the experience of difference defines and modifies women's realities.

Wi Qtr. 2-2-hr cl. Prereq: 10 cr hrs of wom stds course work and permission of instructor.

**775 Studies in Feminist Theory G 5**

A series of courses which examine the relationships between feminist theories and other significant explanatory systems in the Western cultural tradition.

2-2-hr cl. Prereq: 5 cr hrs in wom stds at the 500 or 600 level, or permission of instructor. Not open to students with credit for these topics under 700. Repeatable to a maximum of 20 cr hrs in any combination of decimal subdivisions.

**775.01 Marxism and Feminist Theory**

Traces the development of Marxist thought in relation to feminist theory from the 19th century to the present with emphasis on key issues.

**775.02 Psychoanalysis and Feminist Theory**

An analysis of major psychoanalytic writings about women and feminist responses to them.

**775.03 Feminism and Black Political Thought**

Theoretical analysis of the politics and perceptions of womanhood in the black community.

**Studies in Women's History**

See History 781.

**H783 Honors Research U 3-5**

A program of individual study for undergraduate honors students; may include individual conferences and reports; requires presentation and oral defense of an honors thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a CPHR of at least 3.50 in women's studies courses; permission of thesis adviser and Arts and Sciences Honors Committee. At least 8 cr hrs and 2 qtrs of enrollment are required of candidates for the BA degree *with distinction* in women's studies. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**792 Interdepartmental Studies in the Humanities U G 3-5**

Two or more departments offer courses on subjects of mutual interest.

Repeatable to a maximum of 15 cr hrs.

**Women, Technology, and Education**

See Ed-P&L 853.

**863 Women's Studies Practicum G 3-5**

Internship placement in an agency or organization serving women to provide an opportunity to integrate feminist theory and practice.

Su, Au, Wi, Sp Qtrs. Prereq: 701 and at least 10 additional cr hrs of wom stds course work and permission of instructor. Repeatable to a maximum of 10 cr hrs. Each hr of cr corresponds to 3 hrs per wk of internship for 10 wks. This course is graded S/U.

**Black Role Models: Racism and Sexism**

See Black St 865.

**880 Research Seminar G 3**

The first quarter of a two-quarter seminar in which students will research and write an original scholarly paper and critique the work of other students.

Au Qtr. 1 3-hr cl. Prereq: Permission of instructor. This course is progress (P) graded. Credit given upon completion of 881.

**881 Research Seminar G 3**

The second quarter of a two-quarter seminar in which students will research and write an original scholarly paper and critique the work of other students.

Wi Qtr. 1 3-hr cl. Prereq: 880.

**Seminar in Women's History**

See History 881.

**890 Interdepartmental Studies in Critical Theory G 5**

Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.

Sp Qtr. 2-2-hr or 5 cl. Prereq: Background in critical theory recommended. Repeatable to a maximum of 10 cr hrs. Cross-listed in Comparative Studies in the Humanities, English, French, German, and Spanish.

**998 Research in Women's Studies: Thesis G 1-15**

Directed research for master's thesis.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Appropriate progress toward the degree. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

## Yiddish

256 Cunz Hall, 1841 Millikin Road, 292-9255

### 101 Elementary Yiddish I U 5

Introduction to Yiddish; development of listening, reading, speaking and writing skills.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

### 102 Elementary Yiddish II U 5

Continuation of 101; further development of listening, reading, speaking and writing skills.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course. FL Admis Cond course.

### 103 Intermediate Yiddish I U 5

Continued study of Yiddish; development of listening, reading, speaking and writing skills; reading of simplified literary texts about Yiddish culture.

Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

### 104 Intermediate Yiddish II U 5

Readings of Yiddish short stories and poems with attention to literary and cultural appreciation; development of basic language skills.

Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC/LAR course.

### 241 Yiddish Culture U 5

Introductory survey of political, social, ideological, and religious trends as reflected in Yiddish culture, especially folklore and literature.

Sp Qtr. 5 cl. Not open to students with credit for 341. BER/GEC/LAR course.

### 293 Individual Studies U 1-5

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 294 Group Studies U 1-5

Special topics announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 367 Jewish-American Voices in U. S. Literature U 5

Introduction to Jewish-American literature; development of expository writing and argumentation skills through systematic and critical reflection upon their own country from the perspective of an ethnic community.

Wi Qtr. 2-2-hr cl. Prereq: English 110 or 111 or equiv, and soph standing. GEC/LAR course.

### 371 Yiddish Literature in Translation U 5

Reading, analysis, and discussion of representative works and of the development of major movements and genres in Yiddish literature.

Sp Qtr. 5 cl. Taught in English. BER/GEC/LAR course.

### 401 Advanced Yiddish I U 5

Reading in literary and journalistic prose, with practice in conversation and composition; intensive review of Yiddish grammar.

Wi Qtr. 5 cl. Prereq: 104 or equiv. Not open to students with credit for 294. Wi 83 or Wi 84.

### 402 Advanced Yiddish II U 5

Readings in texts from the nineteenth century to the present with emphasis on contemporary prose; practice in conversation and composition.

Sp Qtr. 5 cl. Prereq: 401 or equiv. Not open to students with credit for 294. Sp 84.

### 603 Advanced Yiddish Conversation and Composition U G 5

Intensive practice in speaking and writing Yiddish, based on contemporary Yiddish literary usage; conducted entirely in Yiddish.

Au Qtr. 5 cl. Prereq: 402 or permission of instructor.

### 611 History of the Yiddish Language U G 5

Linguistic history of Yiddish; Yiddish dialect formation; analysis of Yiddish documents from the 13th century to the present; Yiddish in the context of Jewish interlinguistics.

5 cl. Prereq: 402 or equiv or permission of instructor.

### 612 Yiddish Linguistic Geography U G 5

Development and description of Yiddish dialect areas; linguistic atlases and the mapping of Yiddish dialect features; dialect networks; development of standard Yiddish.

Au, Wi Qtrs. 2-2-hr cl. Prereq: 402 or permission of instructor.

### 641 Language and Society in Interwar Vienna U G 5

Interwar Viennese social and political structure; language and literary expression; ethnic diversity; arts and architecture; gender politics; transition of empire to republic; roots of Austro-fascism; anti-Semitism.

Wi, Sp Qtrs. 2-2-hr cl. Prereq: Jr standing or permission of instructor. Not open to students with credit for German 641. Cross-listed in German.

### 651 Modern Yiddish Prose U G 5

Reading and analysis of short stories and novels representative of major developments and trends in Yiddish prose of the 19th and 20th centuries.

Au Qtr. 5 cl. Prereq: 402 or equiv.

### 693 Individual Studies U G 1-5

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Maximum of 15 cr hrs. This course is graded S/U.

### 694 Group Studies U G 1-5

Special topics to be announced in the quarter previous to the one in which the course is offered.

Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 697 Study at a Foreign Institution U G 1-15

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

### 721 Studies in Yiddish Literature U G 5

Advanced study of specific literary periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials.

Au, Wi, Sp Qtrs. 5 cl. Prereq: 5 cr hrs of Yiddish at the 600 level. Repeatable to a maximum of 15 cr hrs.

### H783 Honors Research U 3-5

A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation *with distinction*, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR in the commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 811 Seminar in Yiddish Studies G 5

In-depth study of a selected topic or issue in Yiddish literature, linguistics, or intellectual culture.

Au, Wi, Sp Qtrs. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

### 998 Research in Yiddish G 1-10

Research for thesis purposes only.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

## Yoruba

486 University Hall, 230 North Oval Mall, 292-3700

### 101 Elementary Yoruba I U 5

Introduction to elementary Yoruba with emphasis on oral proficiency.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit or to students with 3 or more yrs of study in this language in high school. GEC/LAR course. FL Admis Cond course.

### 102 Elementary Yoruba II U 5

Continuation of 101 with emphasis on oral proficiency.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

### 103 Intermediate Yoruba I U 5

Intermediate Yoruba, combining oral and reading skills.

Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

### 104 Intermediate Yoruba II U 5

Continuation of 103, combining oral and reading skills.

Sp Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

## Zoology

104 Botany and Zoology Building, 1735 Neil Avenue, 292-8088

### 125 Introductory Aquatic Biology U 3

Components of the ecosystem in freshwater aquatic environments at; Stone Laboratory.

Su Qtr. Arr. Prereq: A course in high school biology.

### 232 Introductory Physiology U 5

A survey of human nerves and nervous systems, sense organs, muscle function, circulation, respiration, digestion, metabolism, kidney function, and reproduction.

Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 5 cr hrs in general biology or general chemistry; Biology 102 or 113 recommended. Credit does not count toward a major in zoology. Not intended for biological science majors. BER/GEC/LAR course. NS Admis Cond course.

### 235 Introductory Anatomy U 5

An introduction to mammalian anatomy with emphasis on human anatomy; dissection of cat.

Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 5 cr hrs in general biology (Biology 102 recommended) or Anthrop 200. Not open to premedical students or students with credit for 512. Credit does not count toward a major in zoology. Not intended for biological science majors. BER/GEC/LAR course. NS Admis Cond course.

### 293 Individual Studies U 1-5

Individual work in the field of the chosen problem.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: 201 or 405; and written permission of instructor. Only 5 hrs to count on zoology major. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

### 294 Group Studies U 1-5

Study of selected topics in zoology.

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs with different topics.

### 322 Introduction to Ornithology U 5

The general biology of birds with emphasis on their natural histories and on the field identification of local species.

Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 5 cr hrs in introductory biology. Not open to students with credit for 220. NS Admis Cond course.

### 350 Dynamics of the Dinosaurs U 3

Review of current information on dinosaur biology, emphasizing scientific approaches to reconstructing dinosaurs as living, dynamic animals.

Sp Qtr. 3 cl, 1 one-day field trip. Prereq: 5 cr hrs of biological science or historical geology course work. Not open to students with credit for 250.

### 400 Evolution U 3

Basic conceptual issues and processes in evolution with emphasis on the ecological basis of adaptation and consequences of natural selection.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Biology 114 or H116. Not open to students with credit for 420.

### 405 Animal Diversity and Systematics U 4

Survey of animal diversity with emphasis on nutritional, locomotory, and reproductive strategies, and evolutionary relationships within major taxonomic groups.

Au, Wi, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq: 400. Not open to students with credit for 201.

### 410 Animal Form and Function U 3

Functional systems in invertebrates and vertebrates: respiration; circulation; water, ion, and energy balance; communication; locomotion; and reproduction.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Biology 114 or H116, Chem 122, Math 148, and Physics 111 or 131. Not open to students with credit for 633 or 654.

### 413 Introduction to Ecology

Cross-listed in Plant Biology. BER/LAC course. NS Admis cond courses.

#### 413.01 Lecture U 3

Distribution and abundance of species, population dynamics, community ecology, ecosystem dynamics, and applied perspectives.

Au, Wi Qtrs. 3 cl. Prereq: 10 cr hrs in biological sciences. Not open to students with credit for 313 or its subdivisions or Plnt Bio 313 or its subdivisions.

#### 413.02 Laboratory U 2

Critique of ecological primary literature, analysis of ecological data, and design and execution of experiments.

Au, Wi Qtrs. 2 cl. Prereq or concur: 413.01 or Plnt Bio 413.01. Not open to students with credit for 313 or its subdivisions or Plnt Bio 313 or its subdivisions.

### 413.03 Lecture and Laboratory

Distribution and abundance of species, population dynamics, community ecology, ecosystem dynamics, applied perspectives, and design and execution of experiments.

Not open to students with credit for 313, 313.01, 313.02, 413.01, 413.02, or Plnt Bio 313.01, 313.02, 313, 413.01, or 413.02. Offered only at the extended campuses.

### 415 Principles of Animal Cellular and Developmental Biology U 4

Introduction to the structure and function of animal cells, and to patterns of early development in vertebrates and invertebrates.

Wi Qtr. 4 cl. Prereq: 400 recommended; Biology 113 or H115, Chem 231 or 252, and Physics 112 or equiv. Not open to students with credit for 432, 515, or 522; or Mol Gen 502.

### 440 Introductory Ethology U 5

Observations of animal behaviors, and introductory analysis of their adaptive value, physiological mechanisms, development, and evolution; emphasis on movie presentations, reading, and small-group discussions.

Sp Qtr. 4 cl, 1 2-hr field work per week. Prereq: 201 or 405. Not open to students with credit for 340. BER/GEC/LAR course.

### 470 Biology of Vertebrates U 5

Analysis of the anatomical, physiological, behavioral and ecological characteristics of the major vertebrate groups.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: 201 or 405.

### 505 Marine Biology and Ecology U G 5

Diversity and distribution of marine organisms; population dynamics, productivity, and structure of marine ecosystems; human impact on ocean resources.

Su Qtr(2nd term), Stone Lab, 3 all-day cl per week. Prereq: 201 or 405, or Plnt Bio 102 or 112 or equiv; Plnt Bio 313 or 413 or Zoology 313 or 413 recommended.

### 512 Laboratory in Vertebrate Dissection U G 2

Introduction to the techniques of vertebrate dissection and comparative procedure.

Au, Wi, Sp Qtrs. 1 4-hr lab. Prereq or concur: 410 or 511. Not open to students with credit for 335.

### 514+ Laboratory in Animal Physiology U G 2

Introduction to the principles and techniques of animal physiology gained through laboratory experiments.

Wi Qtr. 1 4-hr lab. Prereq or concur: 410 or 415 or stat 515 or aphysiol course.

### 540 Sensory Bases of Behavior U G 5

An exploration and analysis of animal sensory mechanisms—ways in which energies and information concerning environmental events are modified and converted into meaningful biological signals.

Wi, Sp Qtrs. 5 cl. Prereq: 410 or 511, or a physiol course.

### 597 Issues of the Contemporary World U 5

Prereq: Sr standing. GEC/LAR course.

#### 597.02 Antarctic Marine Ecology and Policy

Historical and contemporary evaluation of Antarctic resource management and its scientific basis.

Sp Qtr. 3 1½-hr cl. Not open to students with credit for Int Stds 597.02 or Nat Res 597.02. Cross-listed in International Studies and Natural Resources.

### 610 Animal Parasitology U G 5

The general principles of parasitology, emphasizing morphology, life histories, epidemiology, identification and host relationships of protozoan and metazoan parasites of zoological, medical and veterinary importance.

Au Qtr. 4 cl, 1 3-hr lab. Prereq: 201 or 405 or equiv and jr standing or above.

### 612 Invertebrate Zoology U G 5

The collection and identification of invertebrate animals, development of methods of classification, and use of keys.

Su Qtr (2nd term), Stone Lab, 3 all-day cl per wk. Prereq: 201 or 405 or equiv.

### 613 Biology of the Invertebrates U G 5

Ecology, evolution, morphology, embryology, and physiology of major invertebrate groups exclusive of insects; labs will illustrate lecture concepts using living and preserved material.

Au Qtr. 3 cl, 2 2-hr labs, 1 required wkend field trip to Lake Erie. Prereq: 201 or 405 and 10 additional cr hrs in zoology above the 200 level or equiv, and English 110 or 111 or equiv. GEC/LAR course.

**617+ Theoretical Ecology I U G 5**

The models, assumptions, and conclusions of the mathematical theory of ecology including stability notions, deterministic and stochastic models, and models for patchy environments.

Wi Qtr. 5 cl. Prereq: 313 or 413.01 or equiv; differential and integral calculus. Not open to students with credit for 714 or Plnt Bio 617. This course is graded S/U. Cross-listed in Plant Biology.

**621 Ichthyology U G 5**

Study of the distribution and classification of fishes, which includes methods of identification, collection, and preservation.

Su Qtr (1st term), Stone Lab, 3 all-day cl per wk. Prereq: 201 or 405 or equiv.

**622\* Herpetology U G 5**

Local species of reptiles and amphibians, their habits, life histories, ecology, and classification.

Su Qtr (2nd term), Stone Lab, 3 all-day cl per wk. Prereq: 201 or 405 or equiv.

**624\* Field Techniques in Ornithology U G 5**

Topics include instinctive behavior in the life of birds, the breeding cycle, social relations, territory, ecology, characteristics of populations, and techniques in field study of birds.

Su Qtr (1st term), Stone Lab, 3 all-day cl per wk. Prereq: 10 cr hrs of bio sci course work or permission of instructor.

**625 Mammalogy U G 5**

Mammals of the world, their natural history, distribution, taxonomy, and major anatomical and physiological adaptations; study of local species emphasized in lab.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 201 or 405 or equiv.

**626 Biology of Fishes U G 5**

Lecture emphasis on the behavior, migration, distribution, and evolution of fishes; laboratory emphasis on ecological and systematic ichthyology.

Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 201 or 405, 15 cr hrs in biological sciences, or permission of instructor.

**630 Vertebrate Histology U G 5**

Examination and analysis of the functional morphology of cells and tissues of vertebrate animals, with emphasis on mammalian histology.

Wi Qtr. 3 cl, 2 3-hr labs. Prereq: 5 cr hrs in biological structure/functions (e.g., 410, 415, or Mol Gen 502) or permission of instructor. Not open to students with credit for 530. GEC/LAR course.

**632 Neurobiology U G 5**

Survey of neuroscience covering neuronal cell physiology, properties of neural circuits, neural development, and functional organization of nervous systems.

Sp Qtr. 5 cl. Prereq: 10 cr hrs of biological sciences at 500 level or above, or grad standing. Not open to students with credit for 532, or Neurosci 724 and 725.

**634+\* Vertebrate Reproduction U G 5**

A study of the evolutionary, morphological, hormonal, and environmental aspects of reproduction in vertebrates with laboratory investigations of fish, birds, and mammals.

Au Qtr. 3 cl, 2 2-hr labs. Prereq: 405 or 410 and Vet Phys 411 or equiv.

**637+\* Aspects of Vertebrate Functional Anatomy U G 5**

Exploration of interactions of historical, mechanical, and functional factors that affect the structure of recent vertebrates.

Wi Qtr. 4 cl, 1 3-hr lab. Prereq: 335 or equiv or permission of instructor.

**640 Animal Behavior U G 5**

An experimental study of the biological basis of animal reactions.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 340 or 440 or permission of instructor.

**647\* Plankton U G 5**

Examination of phytoplankton and zooplankton communities, emphasizing population dynamics, seasonality, predation, and productivity; lab emphasis on identification and quantitative methods for collecting and enumerating plankton.

Au Qtr. 2 cl, 2 3-hr labs, 1 required wkend field trip to Lake Erie. Occasionally offered Su Qtr at Franz Theodore Stone Lab. Prereq: English 110 or 111 or equiv, and 20 cr hrs in biological sciences; Zoology 652 or 655 recommended. Not open to students with credit for Plnt Bio 647. Cross-listed in Plant Biology. GEC/LAR course.

**651 Field Zoology U G 5**

Field and laboratory identification of aquatic and terrestrial vertebrates and invertebrates of the region, in relation to habitats occupied.

Su Qtr (1st term), Stone Lab, 3 all-day cl per wk. Prereq: 201 or 405 or equiv.

**652 Limnology U G 5**

Study of physical, geological, chemical and biological factors influencing freshwater life; field and laboratory techniques for determining lake morphometry, chemistry and biological productivity are emphasized.

Su Qtr (1st term), Stone Lab, 3 all-day cl per wk. Prereq: 201 or 405 or equiv with written permission of instructor, 10 cr hrs in chem, 10 cr hrs in physics.

**653 Fish Ecology U G 5**

Field and laboratory studies of life histories and interspecific relationships of fishes and of the various factors influencing their abundance.

Su Qtr (2nd term), Stone Lab, 3 all-day cl per wk. Overnight field trips. Prereq: 621 or equiv.

**654\* Ecological Physiology of Aquatic Animals****654.01 Ecological Physiology of Aquatic Animals U G 4**

Study of the aquatic habitat includes physical and chemical adjustment, tolerance, and acclimatization to environment of vertebrates and invertebrates.

Wi Qtr. 4 cl. Prereq: 410 or equiv; or 5 cr hrs each in chem, physics, and physiol. Not open to students with credit for 654 or 654.02.

**654.02 Third Writing Course U G 5**

Study of the aquatic habitat including physical and chemical adjustment, tolerance, and acclimatization to environment of vertebrates and invertebrates.

Wi Qtr. 4 cl. Prereq: 410 or equiv; or 5 cr hrs each in chem, physics, and physiol; and second writing course. Not open to students with credit for 654 or 654.01.

**655 Limnology U G 5**

A study of the physical, chemical, and biological factors influencing the biological productivity of inland waters, and of techniques and equipment used in evaluating them.

Sp Qtr. 3 cl, 1 4-hr lab, several field trips (some Sat). Prereq: 10 cr hrs in chem and 20 cr hrs in biological sciences.

**660+\* Fisheries Biology U G 5**

A population dynamics approach to fishery biology emphasizing ecological relationships, yield models, and human constraints.

Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 655 and English 110 or 111 or equiv. GEC/LAR course.

**661 Wildlife Biology U G 5**

Study of the influence of ecological succession and human land use on wildlife habitat, and an exploration of wildlife population ecology.

Au Qtr. 3 cl, 2 2-hr labs, occasional field trips (some Sat). Prereq: 15 cr hrs in biological sciences above the 100-level, including 313 or 413.01 or Plnt Bio 313 or 413.01 or equiv.

**662 Wildlife Biology Techniques U G 5**

Techniques employed in the field of wildlife biology, with emphases on game birds and mammals; designed for zoology majors specializing in wildlife biology.

Wi Qtr. 3 cl, 2 2-hr labs, Sat field trips. Prereq: 661 or Nat Res 321 or equiv; and Stat 125 or 135 or 145 or 245, or Nat Res 222 or equiv.

**692 Workshop U G 1-6**

Intensive study of topics in zoology; format will depend upon the topic and time.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of workshop director. Repeatable to a maximum of 12 cr hrs.

**693 Individual Studies U 2-5 G 2-10**

Individual work in the field of the chosen problem.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. No more than 5 cr hrs may be counted toward an undergrad zoology major. Repeatable to a maximum of 15 cr hrs for undergrads. This course is graded S/U.

A—Anatomy. Gaunt, Hetherington, Stetson, and Volman.

B—Animal Behavior. Bradley, Grubb, Masters, Parker, and Stein.

C—Animal Ecology. Bart, Berra, Culver, Downhower, Harder.

D—Vertebrate Zoology. Downhower.

E—Invertebrate Zoology. Armitage and Culver.

F—Ornithology. Gaunt, Grubb, and Parker.

G—Parasitology. Pappas.

H—Wildlife Biology. Bart, Bookhout, and Harder.

I—Limnology. Culver.

J—Comparative Physiology. Greenwald, and Pappas.

K—Electron Microscopy. Stetson.

L—Population Ecology. Downhower, Masters, Parker, and Stein.

M—Systematics. Berra and Cavender.

N—Ichthyology. Berra, Cavender, and Stein.

O—Fisheries Biology. Berra, Cavender, and Stein.

P—Neurobiology. Hetherington, Masters, and Volman.

**694 Group Studies U G 2-5**

Group work in the field of the chosen problem (see topics in 693).

Su, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for undergrads and to a maximum of 35 cr hrs for grads.

**697 Study at a Foreign Institution U G 1-15**

An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

**698 Study Tour U G 1-15**

Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.

Prereq: Permission of instructor. Repeatable for different titled study tours only.

**698.01 Domestic****698.02 Foreign****714\* Theoretical Ecology II U G 5**

Continuation of 617 with emphasis on populations in environments, stochastic models, and nonequilibrium theory.

Wi Qtr. 5 cl. Prereq: 617 or Plnt Bio 617 or permission of instructor. This course is graded S/U. Not open to students with credit for Plnt Bio 714. Cross-listed in Plant Biology.

**740 Behavioral Ecology U G 5**

Comparative study of mechanisms, ontogeny, function and evolution of behavior in its ecological and social contexts.

Au Qtr. 3 1½-hr cl. Prereq: Sr standing; 640 or Psych 601 or equiv with written permission of instructor.

**741† Social Behavior****741.01 Lecture U G 4**

Theory of the evolution of social behavior in animals, from spacing patterns and mating systems through complex social systems including reproductive division of labor.

Wi Qtr. 2 1½-hr cl. Prereq: 313 or 413.01 (or Plnt Bio 313 or 413.01), 340, 440, 640, or 740 recommended, or permission of instructor.

**741.02 Laboratory U G 2**

DNA-based techniques for discerning genetic relatedness among individuals.

Wi Qtr. 6 hrs. Prereq: 741.01, prereq or concur: Mol Gen 500 or 501; or permission of instructor.

**H783 Honors Research U 3-5**

A program of reading and research for each student, with individual conferences, reports, and Honors thesis.

Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degrees BS or BA *with distinction* in zoology. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

**800† Zoological Literature and Preparation of Manuscripts G 3**

A study of library organization, bibliographies, and guides to zoological literature; the preparation of scientific papers for publication.

Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 15 cr hrs in entomology or zoology at the 600-level or above.

**880 Seminar G 1-2**

Required of all grad majors in zoology during the first Au Qtr of registration.

Au, Wi, Sp, Su Qtrs. 1 cl. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

**881 Seminars on Selected Topics G 2**

Selected topics to be announced.

Au, Wi, Sp Qtrs. This course is graded S/U.

A—Anatomy and Physiology

B—Behavior

C—Cell Biology

D—Ecology

E—Evolution

F—Marine Biology

G—Wildlife Biology

H—Fisheries Biology

**891 Interdepartmental Seminar in Environmental Biology G 2**

Selected topics treating the environmental aspects of organisms, populations, and ecosystems as they may relate to time, space, and human activities.

Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Given cooperatively by Botany, Entomology, Microbiology, and Zoology. This course is graded S/U.

**999 Research in Zoology G Arr**

Research for thesis and dissertation purposes only.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

**Zulu**

486 University Hall, 230 North Oval Mall, 292-3700

**101 Elementary Zulu I U 5**

Introduction to elementary Zulu, using a proficiency-based approach.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC/LAR course. FL Admis Cond course.

**102 Elementary Zulu II U 5**

Continuation of 101, using a proficiency-based approach.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course. FL Admis Cond course.

**103 Intermediate Zulu I U 5**

Introduction to intermediate Zulu, using a proficiency-based approach.

Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course.

**104 Intermediate Zulu II U 5**

Continuation of 103, using a proficiency-based approach.

Sp Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC/LAR course.

## Organization of Instructional Units

Ohio State's instructional units—colleges, schools, departments, academic faculties, divisions, and centers—are grouped as in the following section.

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### Office of Academic Affairs

Department of Air Force Aerospace Studies  
 Department of Military Science  
 Department of Naval Science  
 Mershon Center  
 Office of International Affairs  
 Regional Campuses  
 University Honors Center

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### College of Agriculture

Department of Agricultural Economics and Rural Sociology  
 Department of Agricultural Education  
 Department of Agricultural Engineering  
 Department of Agronomy  
 Department of Animal Science  
 Department of Dairy Science  
 Department of Food Science and Technology  
 Department of Horticulture  
 Department of Plant Pathology  
 Department of Poultry Science

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### School of Natural Resources

Environmental Education Division  
 Fisheries and Wildlife Management Division  
 Forestry Division  
 Parks and Recreation Administration Division

### Agricultural Technical Institute

Division of Agricultural Business Technologies  
 Division of Animal Industries Technologies  
 Division of Engineering Technologies  
 Division of Horticultural Industries Technologies

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## Colleges of the Arts and Sciences

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### College of the Arts

Department of Art  
 Department of Art Education  
 Department of Dance  
 Department of History of Art  
 Department of Industrial Design  
 Department of Theatre

### School of Music

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### College of Biological Sciences

Department of Biochemistry  
 Department of Entomology  
 Department of Microbiology  
 Department of Molecular Genetics  
 Department of Plant Biology  
 Department of Zoology  
 Division of Sensory Biophysics

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### College of Humanities

Department of Black Studies  
 Department of Classics  
 Department of East Asian Languages and Literatures  
 Department of English  
 Department of French and Italian

Department of Germanic Languages and Literatures  
 Department of History  
 Department of Near Eastern, Judaic, and Hellenic Languages and Literatures  
 Department of Linguistics  
 Department of Philosophy  
 Department of Slavic and East European Languages and Literatures  
 Department of Spanish and Portuguese  
 Division of Comparative Studies in the Humanities  
 Melton Center for Jewish Studies  
 Center for Medieval and Renaissance Studies  
 Center for Women's Studies  
 Center for Folklore

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### College of Mathematical and Physical Sciences

Department of Astronomy  
 Department of Chemistry  
 Department of Geodetic Science and Surveying  
 Department of Geological Sciences  
 Department of Mathematics  
 Department of Physics  
 Department of Statistics

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### College of Social and Behavioral Sciences

Department of Anthropology  
 Department of Communication  
 Department of Economics  
 Department of Geography  
 Department of Political Science  
 Department of Psychology  
 Department of Sociology  
 Department of Speech and Hearing Science

### School of Journalism

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### College of Business

Department of Accounting and Management Information Systems  
 Department of Finance  
 Department of Management and Human Resources  
 Department of Management Sciences  
 Department of Marketing

### School of Public Policy and Management

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### College of Dentistry

Division of Dental Hygiene

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### College of Education

Department of Educational Policy and Leadership  
 Department of Educational Services and Research  
 Department of Educational Studies: Humanities, Science, Technological, and Vocational  
 Department of Educational Theory and Practice  
**School of Health, Physical Education, and Recreation**

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### College of Engineering

Department of Aeronautical and Astronautical Engineering  
 Department of Aviation  
 Department of Chemical Engineering  
 Department of Civil Engineering

Department of Computer and Information Science  
 Department of Electrical Engineering  
 Department of Engineering Graphics  
 Department of Engineering Mechanics  
 Department of Industrial and Systems Engineering  
 Department of Materials Science and Engineering  
 Department of Mechanical Engineering  
 Department of Welding Engineering  
 Division of Mining Engineering  
 Center for Automotive Research

#### **School of Architecture**

Department of Architecture  
 Department of City and Regional Planning  
 Department of Landscape Architecture

### **Graduate School**

#### **College of Human Ecology**

Department of Family Relations and Human Development  
 Department of Family Resource Management  
 Department of Home Economics Education  
 Department of Human Nutrition and Food Management  
 Department of Textiles and Clothing

### **College of Law**

#### **College of Medicine**

Department of Anesthesiology  
 Department of Cell Biology, Neurobiology, and Anatomy  
 Department of Emergency Medicine  
 Department of Family Medicine  
 Department of Internal Medicine  
 Department of Medical Biochemistry  
 Department of Medical Microbiology and Immunology  
 Department of Neurology  
 Department of Obstetrics and Gynecology  
 Department of Ophthalmology  
 Department of Otolaryngology  
 Department of Pathology  
 Department of Pediatrics  
 Department of Pharmacology  
 Department of Physical Medicine and Rehabilitation  
 Department of Physiology  
 Department of Preventive Medicine  
 Department of Psychiatry  
 Department of Radiology  
 Department of Surgery  
 Division of Hospital and Health Services Administration

#### **School of Allied Medical Professions**

Biomedical Communications Division  
 Circulation Technology Division  
 Medical Dietetics Division  
 Medical Record Administration Division  
 Medical Technology Division  
 Occupational Therapy Division  
 Physical Therapy Division  
 Radiologic Technology Division  
 Respiratory Therapy Division

### **College of Nursing**

Department of Family and Community  
 Department of Life Span Process

### **College of Optometry**

#### **College of Pharmacy**

Division of Medicinal Chemistry and Pharmacognosy  
 Division of Pharmaceutical Administration  
 Division of Pharmaceutics and Pharmaceutical Chemistry  
 Division of Pharmacology  
 Division of Pharmacy Practice

### **College of Social Work**

#### **University College**

Office of Continuing Education

#### **College of Veterinary Medicine**

Department of Veterinary Anatomy and Cellular Biology  
 Department of Veterinary Clinical Sciences  
 Department of Veterinary Pathobiology  
 Department of Veterinary Physiology and Pharmacology  
 Department of Veterinary Preventive Medicine



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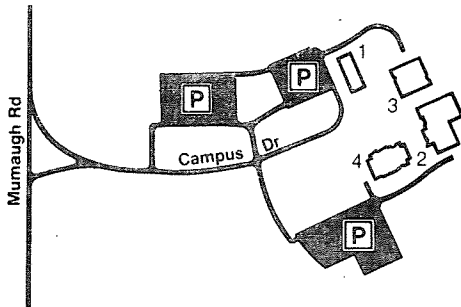
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# OSU regional campuses and ATI

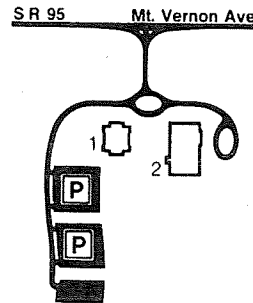
## Lima Campus

- 1 Galvin Hall
- 2 Cook Hall
- 3 Technical Education Laboratory
- 4 Student Activities Building



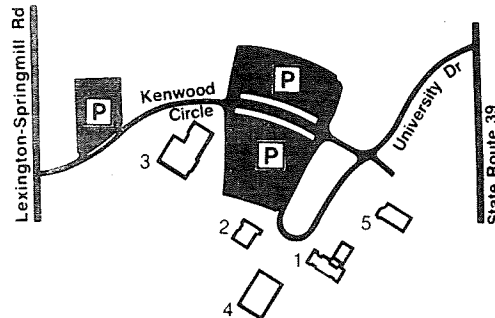
## Marion Campus

- 1 Morrill Hall
- 2 Technical Education Building



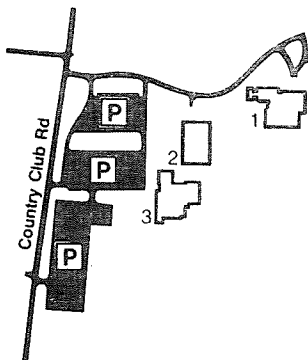
## Mansfield Campus

- 1 Ovalwood Hall
- 2 Eisenhower Memorial Center
- 3 Technical Education Center
- 4 Bromfield Hall
- 5 Physical Activity Center



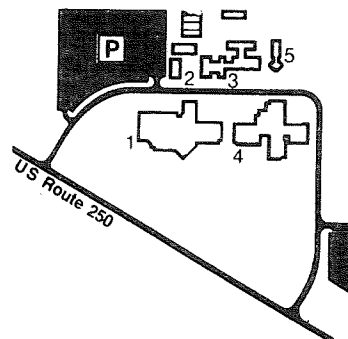
## Newark Campus

- 1 Adena Hall
- 2 Founders Hall
- 3 Hopewell Hall



## Agricultural Technical Institute

- 1 Academic Building
- 2 Agricultural Mechanics Building
- 3 Greenhouse
- 4 Laboratory Building
- 5 Palm and Orchid Greenhouses



The Ohio State University welcomes visitors to its campuses. In the interest of maintaining the orderly process of University business, individuals entering OSU campuses agree to abide by all University rules and regulations.

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United States Department of Defense regulations prohibit gay men, lesbians, and bisexuals from serving in the armed forces, including Reserve Officers Training Corps. As a result of the prohibition, ROTC programs at Ohio State are in violation of University Policy Number 1.10 (Issued 10/1/73).

